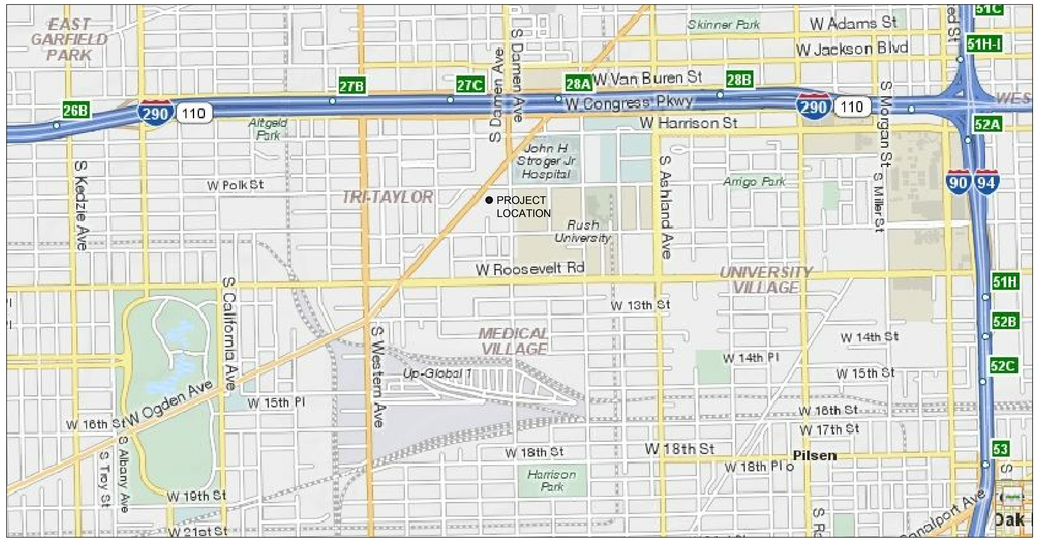
Department of Veterans Affairs

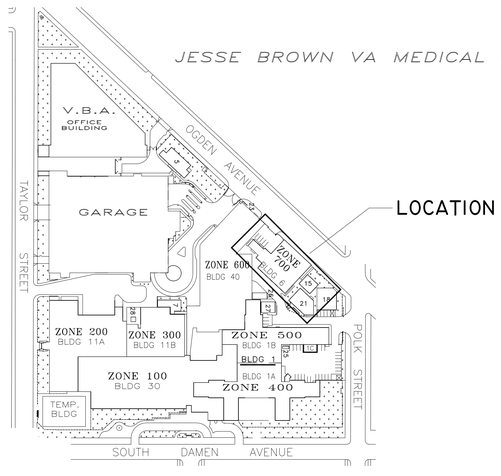
Project # 537-14-110
Task Order 537-07
Contract No.VA69D-12-D-0042
Replace Switchgear in Building 21

JESSE BROWN VAMC
820 S. DAMEN AVE
CHICAGO, IL



VICINITY MAP

north



FACILITY MAP

north

INDEX OF DRAWINGS:

Revisions	Date
ISSUED FOR SOLICITATION	5 MAY 2014

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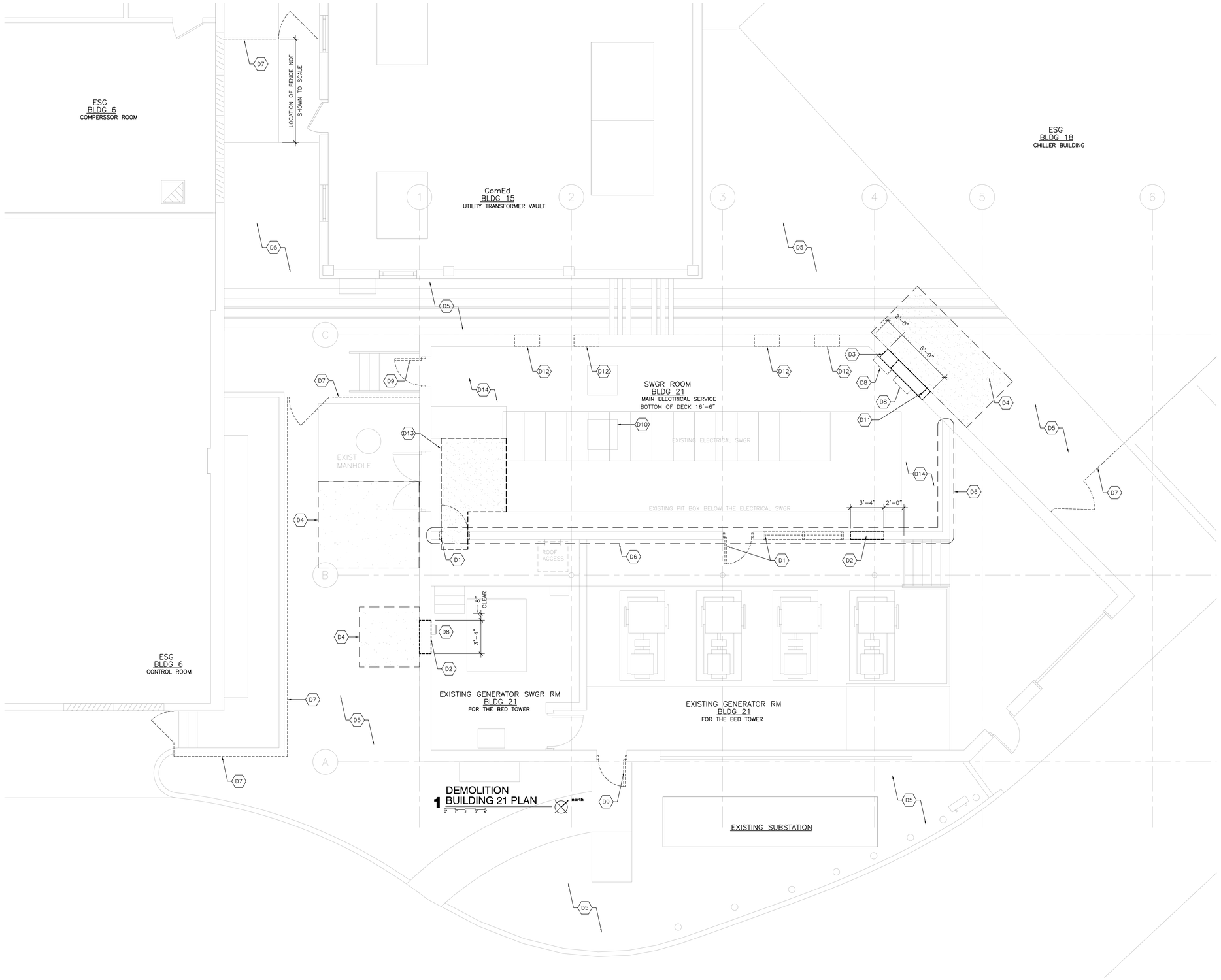
Drawing Title: COVER SHEET & INDEX	Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21	Project Number: 537-14-110	Office of Construction and Facilities Management
Approved: Project Director	Location: JESSE BROWN V.A.M.C.	Building Number: 21	
	Date: 7 JAN 2014 / Checked: MS / Drawn: MS	Drawing Number: 537-21-GI-000	
		Dwg. 1 of 16	Department of Veterans Affairs

VA FORM 08–6231

DEMOLITION KEY NOTES

- (D1) REMOVE EXIST DOOR / WINDOW AND FRAME. PREP OPENING FOR BLOCK INFILL.
- (D2) DEMO EXIST WALL. PREP OPENING TO RECEIVE NEW DOOR AND FRAME. SAW CUT CONC FOUNDATION WALL AS NECESSARY AT EXTERIOR CONDITIONS. PROVIDE STEEL LINTEL.
- (D3) DEMO EXIST WALL. PREP OPENING TO RECEIVE NEW DOOR / FRAME. SEE DOOR SCHEDULE.
- (D4) EXCAVATE AND PREP TO RECEIVE NEW SUBSTRATE AND CONC PAD.
- (D5) REMOVE ALL EXCESS SOILS AND ABANDONED CONSTRUCTION DEBRIS BETWEEN BUILDING 6, BUILDING 15, BUILDING 18 AND BUILDING 21. REMOVE AND ADDITIONAL 6 INCHES OF GRADE AND MAKE LEVEL WITH THE DRIVE CURB USING NEW CRUSHED STONE, LEVEL AND COMPACTED. EXCLUDE THE GRASS AREA BETWEEN BUILDING 15 AND OGDEN AVENUE. FEATHER THE GRADING AWAY FROM THE EXISTING MANHOLES AND PADS
- (D6) PREP CMU WALL @ UNDERSIDE OF ROOF DECK / STRUCTURE TO BE REWORKED FOR 3HR RATED PARTITION.
- (D7) DEMO EXIST CHAIN-LINK FENCE, GATES, POSTS, FOOTINGS AND ASSOCIATED HARDWARE.
- (D8) REMOVE EXIST WALL MOUNTED PANELS AND EQUIPMENT. COORDINATE LOCATION W/ NEW DOOR AND ELEC DESIGN.
- (D9) REMOVE EXIST DOOR AND FRAME. PREP OPENING TO RECEIVE NEW DOOR. SEE DOOR SCHEDULE.
- (D10) EXIST MECH ROOF PENETRATION. REMOVE EXIST CAP AND PREP OPENING TO RECEIVE NEW PERMANENT CLOSURE.
- (D11) PROVIDE THRU OPENING IN EXIST WALL, 6" BELOW BOT OF ROOF TRUSS CORD AND CENTERED ON NEW DOOR OPENING. PROVIDE STEEL LINTEL. PREP OPENING TO RECEIVE LOUVER AND MECH EQUIPMENT. SEE MECH NOTES / DETAILS FOR SIZE AND LOCATION.
- (D12) PROVIDE THRU OPENING IN EXIST WALL. PROVIDE STEEL LINTEL. THE ROUGH OPENING IS APPROXIMATELY 30"x30" AND NEAR THE ROOF. PREP OPENING TO RECEIVE ELECTRICAL SWITCHGEAR ARCH FLASH DUCT. COORDINATE THE EXACT SIZE AND POSITION OF THE OPENINGS WITH THE ELECTRICAL SWITCHGEAR MANUFACTURER AS REQUIREMENTS DIFFER BETWEEN BRANDS. IN ADDITION, COORDINATE WITH SWITCHGEAR POSITION WITH THE ELECTRICAL CONTRACTOR AS A SLIGHT CHANGE IN SWITCHGEAR POSITION WILL CAUSE MISALIGNMENT WITH THE OPENINGS.
- (D13) SAW CUT AND REMOVE EXIST CONC FLOOR DOWN TO 60" BELOW FIN FL. SEE ELEC FOR EXTENSION OF PIT BOX AND NEW ELEC EQUIPMENT LAYOUT. SEE MECH DRAWINGS FOR PLUMBING WORK. PROTECT THE SWITCHGEAR FROM DUST, VAPORS AND VIBRATIONS AS THEY CAN CAUSE UNEXPECTED OR UNRELIABLE OPERATION OF THE SWITCHGEAR RELAYS. UTILIZE HEPA AIR CLEANERS DURING ALL WORK.
- (D14) PREP ALL VERTICAL AND HORIZONTAL SURFACES IN EXISTING SWITCHGEAR ROOM TO RECEIVE NEW PAINT.



1 DEMOLITION BUILDING 21 PLAN north

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Drawing Title: DEMOLITION FLOOR PLAN MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: MC

Project Number: 537-14-110

Building Number: 21

Drawing Number: 537-21-AD-101

Dwg. 2 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

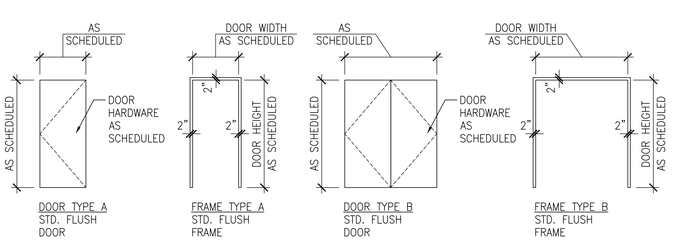
VA FORM 08-6231

DOOR AND FRAME SCHEDULE

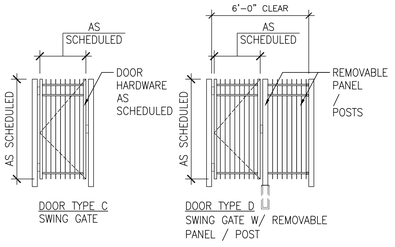
DOOR NUMBER	DOOR				FRAME				HARDWARE SET	REMARKS
	TYPE	MATL	FINISH	SIZE	TYPE	MATL	FINISH	RATING		
001	A	HM	PTD	2'–8" x 8'–0"	A	HM	PTD	–	HW–SH–12 HW–6D	CLOSER, THRESHOLD, CARD READER, ELEC LATCH. NOTE 5
002	EXIST	–	PTD	PR 2'–10" x 9'–0"	–	–	PTD	–	HW–E6	CLOSER, COORDINATOR, THRESHOLD. NOTE 2
003	A	HM	PTD	2'–8" x 8'–0"	A	HM	PTD	–	HW–E1	CLOSER, THRESHOLD
004	A	HM	PTD	2'–8" x 8'–0"	A	HM	PTD	–	HW–SH–12 HW–6D	CLOSER, THRESHOLD, CARD READER, ELEC LATCH. NOTE 5
005	B	HM	PTD	PR 2'–10" x 9'–0"	B	HM	PTD	–	HW–E6 HW–12C	CLOSER, COORDINATOR, THRESHOLD. NOTE 2
006	A	HM	PTD	3'–0" x 8'–0"	A	HM	PTD	3 HR	HW–3D	CLOSER
007	–	STEEL	GALV	4'–0" x 8'–0"	–	STEEL	GALV	–	–	CHAIN–LINK, LOCKABLE HASP, KEYED PADLOCK
008	–	STEEL	GALV	4'–0" x 8'–0"	–	STEEL	GALV	–	–	CHAIN–LINK, LOCKABLE HASP, KEYED PADLOCK
009	D	STEEL	PTD	4'–0" x 8'–0"	–	STEEL	PTD	–	HW–G4	WELDED STEEL, CLOSER
010	D	STEEL	PTD	4'–0" x 8'–0"	–	STEEL	PTD	–	HW–G4	WELDED STEEL, CLOSER
011	D	STEEL	PTD	4'–0" x 8'–0"	–	STEEL	PTD	–	HW–G4	WELDED STEEL, CLOSER

DOOR AND FRAME NOTES • NOTES 1, 4, 6 AND 7 ARE GENERAL NOTES FOR ALL DOORS AND FRAMES

1. REFER TO THE SPECIFICATIONS FOR DOOR HARDWARE TYPES AND ADDITIONAL INFORMATION.
2. REFER TO MECHANICAL DRAWINGS AND NOTES / DETAILS FOR TRANSOM EQUIPMENT AND LOUVER SIZING. FIELD COORDINATE FINAL SIZES AS SIZES VARY BETWEEN MANUFACTURERS BEFORE STARTING INSTALLATION.
3. EXISTING DOOR TO REMAIN. REMOVE RUST, PRIME AND PROVIDE NEW COAT OF PAINT TO MATCH EXISTING. CONTRACTOR TO INSPECT EXISTING HARDWARE TO ENSURE IT IS IN WORKING CONDITION. INCLUDE REPLACING DOOR HARDWARE WITH PANIC BAR EXIT TYPE AND RE–KEYED TO MATCH JB VAMC STANDARD.
4. CONTRACTOR TO COORDINATE ALL KEYING W/ VA. THE CAMPUS STANDARD IS BEST AND THE CONTRACTOR SHALL PROVIDE COMPATIBLE EQUIPMENT. THE VA WILL COORDINATE KEYING WITH THE CONTRACTOR SUPPLIED CYLINDER.
5. CONTRACTOR TO PROVIDE ALL NECESSARY HARDWARE, EQUIPMENT AND INTEGRATION FOR CARD READER SYSTEM AT DESIGNATED LOCATIONS. PROVIDE DOOR AND HARDWARE WITH ELECTRIFIED LATCHES (NOT ELECTRIC STRIKES), WEATHER PROOF CARD READERS W/ CONCEALED CONDUIT. COORDINATE WITH THE CARD READER EQUIPMENT SUPPLIER BEFORE ORDERING THE DOOR HARDWARE, REFER TO THE PLANS FOR ADDITIONAL REQUIREMENTS.
6. ALL HOLLOW METAL FRAMES TO BE GROUTED SOLID.
7. ALL HINGES TO BE STEEL, SEALED BALL BEARING W/ NON–REMOVABLE PINS.
8. NO ELECTRIC LATCH / LOCK REQUIRED THIS DOOR.
9. PAINT ALL NEW DOORS AND FRAMES, COLOR AND FINISH TO MATCH.



DOOR FRAME NOTE: HEAD DIMENSION OF 2" ON FRAMES CAN VARY TO ACCOMODATE CMU COURSING



GENERAL NEW WORK NOTES

1. PROVIDE STEEL LINTELS FOR ALL NEW OPENINGS. SEE STEEL LINTEL SCHEDULE FOR SIZING.
2. TOOTH IN ALL NEW BRICK AND/OR BLOCK INTO EXISTING COURSINGS.
3. PAINT THE EXISTING MEDIUM VOLTAGE SWITCHGEAR ROOM – HORIZ. AND VERTICAL SURFACES
   - 3.1. PROTECT THE SWITCHGEAR FROM VAPORS, DUST AND PAINT SPLATTER AS THAT MAY CAUSE UNRELIABLE OR UNEXPECTED OPERATION OF THE PROTECTIVE RELAYS.
   - 3.2. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS, INCLUDING DUST, DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS. REMOVE PAINT AND PRIMERS. RE–PRIME SUBSTRATE WITH COMPATIBLE PRIMERS OR APPLY TIE COAT AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED.
   - 3.3. CMU – INSTITUTIONAL LOW–ODOR/VOC LATEX SYSTEM:
     - 3.3.1. PRIME COAT/BLOCK FILLER: PRIMER SEALER, INTERIOR, INSTITUTIONAL LOW ODOR/VOC, MPI #4.
     - 3.3.2. TOPCOAT: LATEX, INTERIOR, INSTITUTIONAL LOW ODOR/VOC, (GLOSS LEVEL 3), MPI #145.
   - 3.4. TRAFFIC SURFACES –LATEX FLOOR ENAMEL SYSTEM:
     - 3.4.1. PRIME COAT: FLOOR PAINT, LATEX, LOW GLOSS (MAXIMUM GLOSS LEVEL 3), MPI #60.
     - 3.4.2. INTERMEDIATE COAT: FLOOR PAINT, LATEX, LOW GLOSS (MAXIMUM GLOSS LEVEL 3), MPI #60.
     - 3.4.3. TOPCOAT: FLOOR PAINT, LATEX, LOW GLOSS (MAXIMUM GLOSS LEVEL 3), MPI #60.
   - 3.5. METAL – INSTITUTIONAL LOW–ODOR/VOC LATEX SYSTEM:
     - 3.5.1. PRIME COAT: PRIMER, RUST–INHIBITIVE, WATER BASED MPI #107.
     - 3.5.2. TOPCOAT: LATEX, INTERIOR, INSTITUTIONAL LOW ODOR/VOC, (GLOSS LEVEL 3), MPI #145.

NEW WORK KEY NOTES

A1 CMU BLOCK INFILL – TOOTH ALL BLOCK INTO EXISTING COURSING; 3HR RATED CONSTRUCTION.

A2 HOLLOW METAL DOOR AND FRAME, SEE DOOR SCHEDULE.

A3 GALVANIZED STEEL LANDING, STAIRS AND HANDRAIL. ALL COMPONENTS TO BE SLEEVED INTO CONCRETE SUPPORT SO THAT LANDING, SUPPORTS AND HANDRAILS ARE FULLY REMOVABLE. LANDING, STAIRS AND HANDRAIL TO MATCH EXIST STAIR CONSTRUCTION AT SOUTH ELEVATION. SEE TYPICAL DETAIL 2, DRAWING NO. 537–21–AP–101. STAIR TO BE EMERGENCY EGRESS CODE COMPLIANT.

A4 4" CONC PAD ON 6" COMPACTED CRUSHED STONE SUBSTRATE. FEATHER NEW RE–GRADE AWAY FOR SMOOTH TRANSITION.

A5 MECH EQUIPMENT ABOVE DOOR, SEE MECHANICAL NOTES / DETAILS.

A6 INFILL AND ATTACH THE EXISTING TOP OF CMU WALL TO THE UNDERSIDE OF ROOF DECK / STRUCTURE. EXISTING VOID FROM CMU TO DECK VARIES UP TO 8". PROVIDE A FIRE STOPPING SYSTEM AT THE TOP OF THE WALL AT THE STRUCTURE ABOVE FOR 3HR RATED SEPARATION. SUBMIT FIRE STOPPING SYSTEM DETAILS AND PRODUCTS FOR REVIEW.

A7 REPLACE BRICK/BLOCK PATCH THE HOLES IN THE WALL TO MATCH EXISTING. FILLING WITH GROUT OR CAULK/FIRE STOPPING IS NOT ACCEPTABLE. REFER TO THE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL LOCATIONS.

A8 8' FULLY WELDED IRON FENCE W/ 4' WIDE SWING GATE AND 2' WIDE REMOVABLE AND LOCKABLE SECTION TO ACCOMMODATE 6' CLEAR PATH. PROVIDE ENTIRE ASSEMBLY, TO INCLUDE BUT NOT LIMITED TO (2) TOP AND (1) BOTTOM RAILS, 3/8" SOLID STOCK SQUARE PICKETS, 4" POSTS W/ CAPS, CONC FOOTINGS AND ALL ASSOCIATED HARDWARE. 1 COAT HD EXTERIOR PRIMER + 1 COAT HD EXTERIOR BLACK.

A9 EXIST OVERHEAD COOLING PLANT PIPES AND ELECTRICAL CONDUIT DUCTING TO REMAIN.

A10 PROVIDE THRESHOLD AND WEATHER STRIPPING, SEE DOOR SCHEDULE.

A11 REMOVE THE EXHAUST FAN ASSEMBLY AND PROVIDE PERMANENT INSULATED STEEL CLOSURE CAP. RE–ROOF AS REQUIRED TO PROVIDE WEATHER–TIGHT SEAL TO AVOID WATER DRIP ONTO THE MEDIUM VOLTAGE SWGR.

A12 PAINT EXISTING DOOR AND FRAME AND LOUVER ABOVE, EACH SIDE.

A13 NEW 30"x30" OPENING FOR ELEC DUCT. SEE ARCHITECTURAL DEMOLITION NOTES AND ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.

A14 EXTEND THE EXISTING PIT BOX / CONCRETE SLAB AS REQUIRED. SEE ELEC NOTES / DETAILS FOR ADDITIONAL REQUIREMENTS.

A15 PROVIDE 48"x48"x4" DRAINABLE ALUMINUM LOUVER W/ REMOVABLE INSECT SCREEN TO BE LOCATED NEAR THE STRUCTURE ABOVE HIGH ON THE WALL.

A16 PROVIDE WALL MOUNTED FIRE EXTINGUISHER, CLASS BC 20LB DRY CHEMICAL CO2 WITH WALL MOUNTING HARDWARE.

A17 PROVIDE WALL MOUNTED EYE WASH UNIT. 7 GALLON, SELF–CONTAINED, OPERATES WITHOUT PLUMBING HOOKUP. COUNTER OR WALL MOUNTS EASILY. ANSI Z358.1–2009, SEI CERTIFIED

A18 PAINT ALL VERTICAL AND HORIZONTAL SURFACES IN EXISTING SWITCHGEAR ROOM. PROTECT THE SWITCHGEAR AS VAPORS WILL CAUSE UNRELIABLE OPERATION OF THE SWITCHGEAR PROTECTIVE RELAYS. UTILIZE HEPA AIR CLEANERS.

A19 ARRANGE THE LANDING AND RAILING SUPPORT TO ALLOW TO LIFTING OF THE MANHOLE LID AND VISUAL INSPECTION. IN ADDITION, THE LANDING SHALL BE BOLTED/REMOVABLE TO ALLOW PROPER ACCESS INTO THE MANHOLE FOR SERVICE AND MAINTENANCE.

A20 EXISTING DOOR TO REMAIN. REMOVE RUST, PRIME AND PROVIDE NEW COAT OF PAINT TO MATCH EXISTING. CONTRACTOR TO INSPECT EXISTING HARDWARE TO ENSURE IT IS IN WORKING CONDITION. INCLUDE REPLACING DOOR HARDWARE AS REQUIRED.

A21 PROVIDE 40 FOOT SECTION OF FENCE WITH DOOR 009 BETWEEN BUILDING 18 AND THE EXISTING FENCE ON OGDEN TO CLOSE THE GAP THUS BLOCKING PERSONS FROM WALKING AROUND BACK. THIS AREA OF WORK IS OUTSIDE THE VIEW OF THIS PLAN AND REFER TO THE ELECTRICAL SITE PLAN FOR ADDITIONAL INFORMATION.

EXECUTIVE SUMMARY / NARRATIVE OF THE WORK

TASKS ARE IN SUPPORT OF THE REPLACEMENT MAIN ELECTRICAL SERVICE EQUIPMENT FOR THE ENTIRE JB VAMC CAMPUS.

TASKS INCLUDE READYING THE AREA SUCH AS GRADING, PAINTING, EXIT DOORS, REWORKING THE SLAB FOR EXTENDING THE UNDER SWITCHGEAR PIT BOX AND OPENINGS HIGH IN THE WALL FOR ARC FLASH DISCHARGE CHUTES.

ALL WORK DONE IN VICINITY OF A FULLY FUNCTIONAL COGENERATION PLANT AND COMED ELECTRICAL UTILITY VAULT. MOST WORK OCCURS IN THE MAIN ELECTRICAL SERVICE ROOM WITH 4160 VOLT EQUIPMENT THAT WILL REMAIN OPERATIONAL (POWERS THE ENTIRE JB VAMC CAMPUS).

REFER THE PLANS AND SPECS FOR ALL TRADES FOR ADDITIONAL REQUIREMENTS

MASONRY LINTEL SCHEDULE

LINTEL	4" NOM.	8" NOM.
L1 SPANS UP TO 4'–4"	L 3½ x 3½ x ¼	2L 3½ x 3½ x ¼
L2 4'–4" TO 7'–0"	L 4 x 3½ x 5/16	2L 4 x 3½ x 5/16
L3 7'–0" TO 12'–0"	L 6 x 3½ x ½	2L 6 x 3½ x ½

NOTES:
1. UNLESS OTHERWISE NOTED ON DRAWINGS, LINTELS SHALL HAVE A MINIMUM SIZE AS NOTED IN THE TABLE ABOVE.
2. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOACTAION OF OPENINGS
3. ALL LINTELS IN EXTERIOR WALLS SHALL BE HOT–DIPPED GALVANIZED.

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Revisions:	Date

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Drawing Title: NOTES AND DETAILS MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: MC

Project Number: 537-14-110

Building Number: 21

Drawing Number: 537-21-AP-100

Dwg. 3 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

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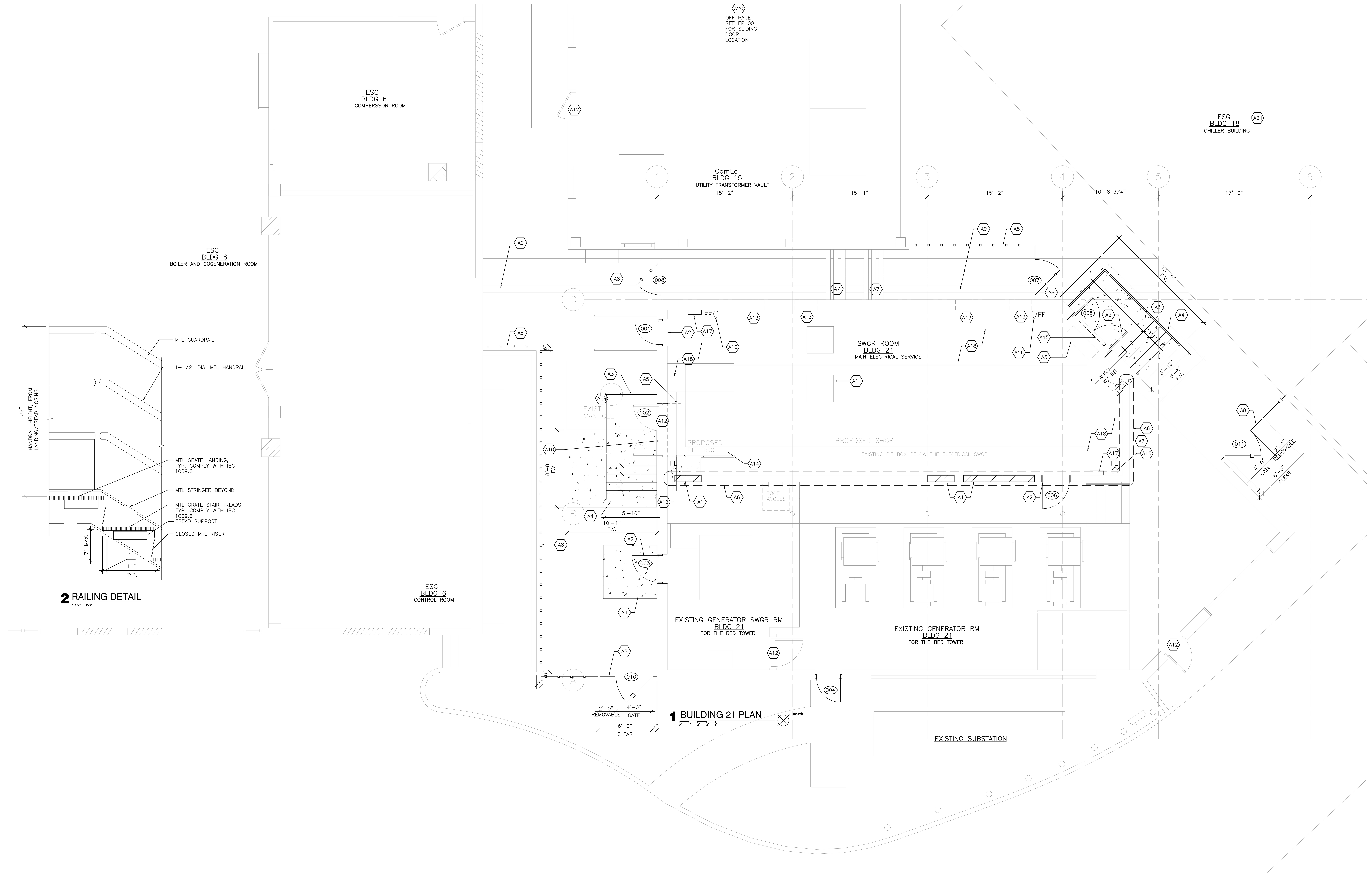
ESG
BLDG 6
COMPERSSOR ROOM
ESG
BLDG 6
BOILER AND COGENERATION ROOM
ESG
BLDG 6
CONTROL ROOM
A20
OFF PAGE–
SEE EP100
FOR SLIDING
DOOR
LOCATION
ComEd
BLDG 15
UTILITY TRANSFORMER VAULT
ESG
BLDG 18
CHILLER BUILDING
A21
15'–2"
15'–1"
15'–2"
10'–8 3/4"
17'–0"
SWGR ROOM
BLDG 21
MAIN ELECTRICAL SERVICE
PROPOSED SWGR
EXISTING PIT BOX BELOW THE ELECTRICAL SWGR
PROPOSED
PIT BOX
EXIST
MANHOLE
ROOF
ACCESS
13'–5"
F.V.
8'–0"
5'–10"
6'–6"
F.V.
ALIGN
W/ INT
FIN
FLOOR
ELEVATION
8'–8"
F.V.
10'–1"
F.V.
2'–0"
REMOVABLE
4'–0"
GATE
6'–0"
CLEAR
EXISTING GENERATOR SWGR RM
BLDG 21
FOR THE BED TOWER
EXISTING GENERATOR RM
BLDG 21
FOR THE BED TOWER
EXISTING SUBSTATION
1 BUILDING 21 PLAN
north
MTL GUARDRAIL
1–1/2" DIA. MTL HANDRAIL
36"
HANDRAIL HEIGHT, FROM
LANDING/TREAD NOSING
MTL GRATE LANDING,
TYP. COMPLY WITH IBC
1009.6
MTL STRINGER BEYOND
MTL GRATE STAIR TREADS,
TYP. COMPLY WITH IBC
1009.6
TREAD SUPPORT
CLOSED MTL RISER
7" MAX.
1"
11"
TYP.
2 RAILING DETAIL
1 1/2" = 1'-0"

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Drawing Title
FLOOR PLAN
MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title
REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location
JESSE BROWN V.A.M.C.

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Dwg. 4 of 16

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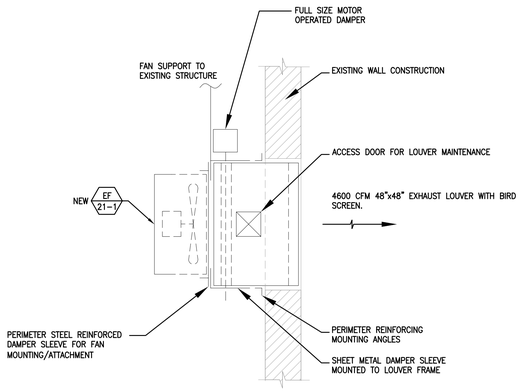
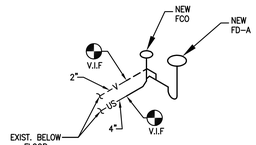


1 FAN DETAIL
NTS



2 NEW PLUMBING RISER
NTS

GENERAL NOTES:

1. ALL WORK PROVIDED BY EACH TRADE CONTRACTOR SHALL BE PROVIDED IN ACCORDANCE WITH DIVISION 1, GENERAL REQUIREMENTS AND ALL APPLICABLE SUBSEQUENT DIVISIONS OF THE SPECIFICATIONS.
2. CONTRACTOR'S SHALL PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY FOR THE WORK, COMPLETE AS SHOWN AND NOTED ON THE DRAWINGS.
3. CONTRACTOR'S SHALL VISIT SITE OF AREAS OF WORK TO FAMILIARIZE EXTENT OF EXISTING CONDITIONS FOR NEW WORK TO BE PROVIDED FOR COMPLETE OPERATING SYSTEM.
4. EACH CONTRACTOR SHALL CO-ORDINATE THEIR WORK WITH THE OTHER WORK OF ALL OTHER TRADES.
5. VOLTAGES OF NEW EQUIPMENT SHALL BE VERIFIED BY THE INSTALLING EQUIPMENT CONTRACTOR.
6. ALL NEW AND MODIFICATIONS TO EXISTING, SHEET METAL DUCTWORK SHALL BE PROVIDED IN STRICT ACCORDANCE WITH SMACNA STANDARDS AND PROCEDURES.
7. NEW MATERIALS, PIPING, ELECTRICAL, ETC SAME GRADE, TYPE, MATERIAL AND CONNECTIONS TO MATCH EXISTING SYSTEM WHERE NEW IS PROVIDED FOR CONNECTIONS TO MATCH EXISTING SYSTEM WHERE NEW IS PROVIDED FOR CONNECTION TO EXISTING.
8. EACH CONTRACTOR SHALL PROVIDE FOR ALL THEIR CUTTING AND PATCHING FOR INSTALLATION OF THEIR WORK IN ALL WALL, ROOF, ETC SURFACES, INCLUDING UL PENETRATION RATINGS WITH ALL PATCHING PROVIDED CONTIGUOUS TO ADJACENT SURFACES.
9. EQUIPMENT SHOP DRAWINGS, TESTING AND COMMISSIONING OF SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH DIVISION 1 REQUIREMENTS.
10. REFER TO ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR EXACT LOCATIONS OF EQUIPMENT, WALL AND GENERAL EQUIPMENT MODIFICATION AND NEW CONSTRUCTION NOTES.
11. EACH RESPECTIVE TRADE CONTRACTOR SHALL RELOCATE AS REQUIRED ANY MINOR INTERFERENCE WITH THEIR NEW WORK INSTALLATION, INCLUDING CONDUIT, HANGERS, ETC. AT NO ADDITIONAL COST TO OWNER.

LEGEND:

- ~~~~ DUCT OR PIPING/SEWER TO BE REMOVED
- —US— UNDERGROUND SANITARY SEWER
- —V— UNDERGROUND VENT PIPING
- VIF VERIFY IN FIELD
- NEW CONNECTION
- FCO FLOOR CLEANOUT
- FD-X FLOOR DRAIN WITH TYPE INDICATED

MECHANICAL DEMOLITION KEYED NOTES

- (DM1) DISCONNECT AND REMOVE ROOF MOUNTED EXHAUST FAN ASSEMBLY, INCLUDING DAMPER, ETC. EXISTING ROOF CURB SHALL REMAIN, NEW INSULATED ROOF CAP; REFER TO ARCHITECTURAL PLANS.
- (DM2) EXISTING OUTSIDE AIR INTAKE DAMPER ASSEMBLY AND SLEEVE SHALL REMAIN
- (DM3) EXISTING CONTROLS FOR ROOM EXHAUST FAN AND PERTINENT O.A. INTAKE DAMPER, INCLUDING THERMOSTAT AND CONTROL WIRING SHALL BE REMOVED. REFER TO THE ELECTRICAL DRAWINGS FOR DEMO WORK SCOPE.
- (DM4) EXISTING ELECTRIC UNIT HEATERS AND RESPECTIVE CONTROLS SHALL BE REMOVED. REFER TO THE ELECTRICAL DRAWINGS FOR DEMO WORK SCOPE.

PLUMBING DEMOLITION KEYED NOTES

- (DP1) REMOVE EXISTING FLOOR DRAIN, INCLUDING RESPECTIVE P-TRAP ASSEMBLY AND UNDER FLOOR SEWER PIPING AND VENT BACK TO POINTS FOR RECONNECTION UNDER NEW WORK SCOPE.
- (DP2) REMOVE EXISTING FLOOR CLEAN OUT ASSEMBLY, INCLUDING RESPECTIVE SEWER PIPING BACK TO POINT FOR RECONNECTION UNDER NEW WORK SCOPE.
- (DP3) EXISTING FLOOR SHALL BE SAW CUT, REMOVED FOR REMOVAL OF PLUMBING WORK TO POINTS FOR RECONNECTION. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
- (DP4) DISCONNECT AND REMOVE EXISTING EYE WASH UNIT, INCLUDING WASTE, WATER AND PERTINENT PIPING THROUGH WALL AND CAP AND / OR PLUG CONNECTIONS NEAR SERVICE SINK TO MEET FIELD CONDITIONS. PATCH ALL WALL OPENINGS FOR PIPES REMOVED TO MATCH EXISTING AND BE CONTIGUOUS TO WALL SURFACE AND MEET EXISTING 3 HR WALL RATING.
- (DP5) EXISTING SPRINKLER STANDPIPE RISER IS TO REMAIN. RECORD DOCUMENTS DO NOT SHOW THE UNDER SLAB ROUTE. THE CONTRACTOR SHALL FIELD SURVEY THE UNDERGROUND PATH AND COORDINATE ALL NEW WORK AS TO NOT IMPACT THIS RISER. THE ELECTRICAL ROOM IS MEDIUM VOLTAGE AND IS NOT AND WILL NOT BE SPRINKLERED.

MECHANICAL NEW WORK KEYED NOTES

- (M1) EXISTING OUTSIDE INTAKE LOUVER, SLEEVE AND MOTOR OPERATED DAMPER ASSEMBLY TO REMAIN.
- (M2) PROVIDE NEW WALL MOUNTED PROPELLER TYPE EXHAUST FAN WITH ALL PERTINENT ACCESSORIES AS DETAILED ON THIS DRAWING.
- (M3) NEW WALL MOUNTED THERMOSTAT FOR EXHAUST FAN OPERATION. REFER TO THE ELECTRICAL DRAWINGS FOR SCOPE OF WORK.
- (M4) NEW EXHAUST FAN CONTROL WIRING BETWEEN EXISTING OUTSIDE AIR INTAKE DAMPER, NEW EXHAUST DAMPER AND THERMOSTAT, REFER TO THE ELECTRICAL DRAWINGS FOR SCOPE OF WORK.

PLUMBING NEW WORK KEYED NOTES

- (P1) PROVIDE NEW FLOOR DRAIN AND TRAP ASSEMBLY WITH UNDER FLOOR RE-VENT OF SIZE TO MATCH EXISTING WITH RECONNECTION TO SEWER AND PIPING BELOW FLOOR LOCATIONS.
  NOTE: TRAP SEAL SHALL BE FILLED WITH APPROVED TYPE VEGETABLE/MINERAL OIL. DRAIN SHALL BE INSTALLED BETWEEN EXISTING WALL & NEW UNDER FLOOR ELECTRICAL TRENCH EXTENSION. REFER TO THE ARCHITECTURAL DRAWINGS.
- (P2) PROVIDE NEW FLOOR CLEANOUT TO FINISHED FLOOR BETWEEN EXISTING WALL AND NEW UNDER FLOOR ELECTRICAL TRENCH EXTENSION. RECONNECT TO SEWER LINE BELOW FLOOR LOCATION.
- (P3) EXISTING CONCRETE FLOOR AREA SHALL BE SAW CUT FOR DEMOLITION AND INSTALLATION OF NEW PLUMBING WORK. REFER TO THE ARCHITECTURAL DRAWINGS FOR SCOPE OF WORK. ALL EXCAVATION AND BACKFILL AND CUTTING THROUGH CONCRETE WORK BELOW FLOOR SHALL BE PART OF THE PLUMBING SCOPE OF WORK WITH CO-ORDINATION WITH THE GENERAL CONTRACTOR.

EQUIPMENT SCHEDULE:

EF21-1: NEW GREENHECK MANUFACTURING, PROPELLER FAN, MODEL SCE-24-315-A7, DIRECT DRIVE, LEVEL 3, SINGLE SPEED, CAPACITY OF 4600 CFM AT 0.625" SP, MOTOR 3/4 HP, 1750 RPM, 208 VOLT, 3 PHASE, 60 HZ. FAN SHALL INCLUDE FABRICATED FAN HOUSING, OSHA MOTOR GUARD. MOTOR OPERATED DAMPER MOUNTED IN WALL SLEEVE TO MATCH LOUVER SIZE.

FD-A: NEW J.R SMITH, CAST IRON DRAIN WITH 8 1/2" ROUND DUCTILE IRON GRATE, SEDIMENT BUCKET, DEEP SEAL TRAP.

FCO: NEW J.R.SMITH, CAST IRON HEAVY DUTY BODY, SERIES 4100 WITH NICKEL BRONZE TOP AND TYPE COMPATIBLE WITH EXISTING PLUMBING SYSTEM.

EXECUTIVE SUMMARY / NARRATIVE OF THE WORK

TASKS ARE IN SUPPORT OF THE REPLACEMENT MAIN ELECTRICAL SERVICE EQUIPMENT FOR THE ENTIRE JB VAMC CAMPUS.

TASKS INCLUDE READYING REMOVING THE ROOF MOUNTED EXHAUST AND INSTALLING WALL MOUNT TO AVOID WATER DRIPPING ONTO THE SWITCHGEAR. UNDERGROUND PLUMBING WORK TO RELOCATE OUT OF THE WAY FOR THE NEW SWITCHGEAR. NEW ARC FLASH DISCHARGE CHUTES WILL BE PROVIDED BY THE SWITCHGEAR MANUFACTURER TO DIRECT THE BLAST ENERGY OUTSIDE. ELECTRIC HEAT IS SHOWN ON THE ELECTRICAL PLANS.

ALL WORK DONE IN VICINITY OF A FULLY FUNCTIONAL COGENERATION PLANT AND COMED ELECTRICAL UTILITY VAULT AND OCCURS IN THE MAIN ELECTRICAL SERVICE ROOM WITH 4160 VOLT EQUIPMENT THAT WILL REMAIN OPERATIONAL (POWERS THE ENTIRE JB VAMC CAMPUS).

REFER THE PLANS AND SPECS FOR ALL TRADES FOR ADDITIONAL REQUIREMENTS

ISSUED FOR SOLICITATION	5 MAY 2014
Revisions:	Date

ARCHITECT/ENGINEERS:

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Drawing Title: MECHANICAL/PLUMBING NOTES MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: MC

Project Number: 537-14-110

Building Number: 21

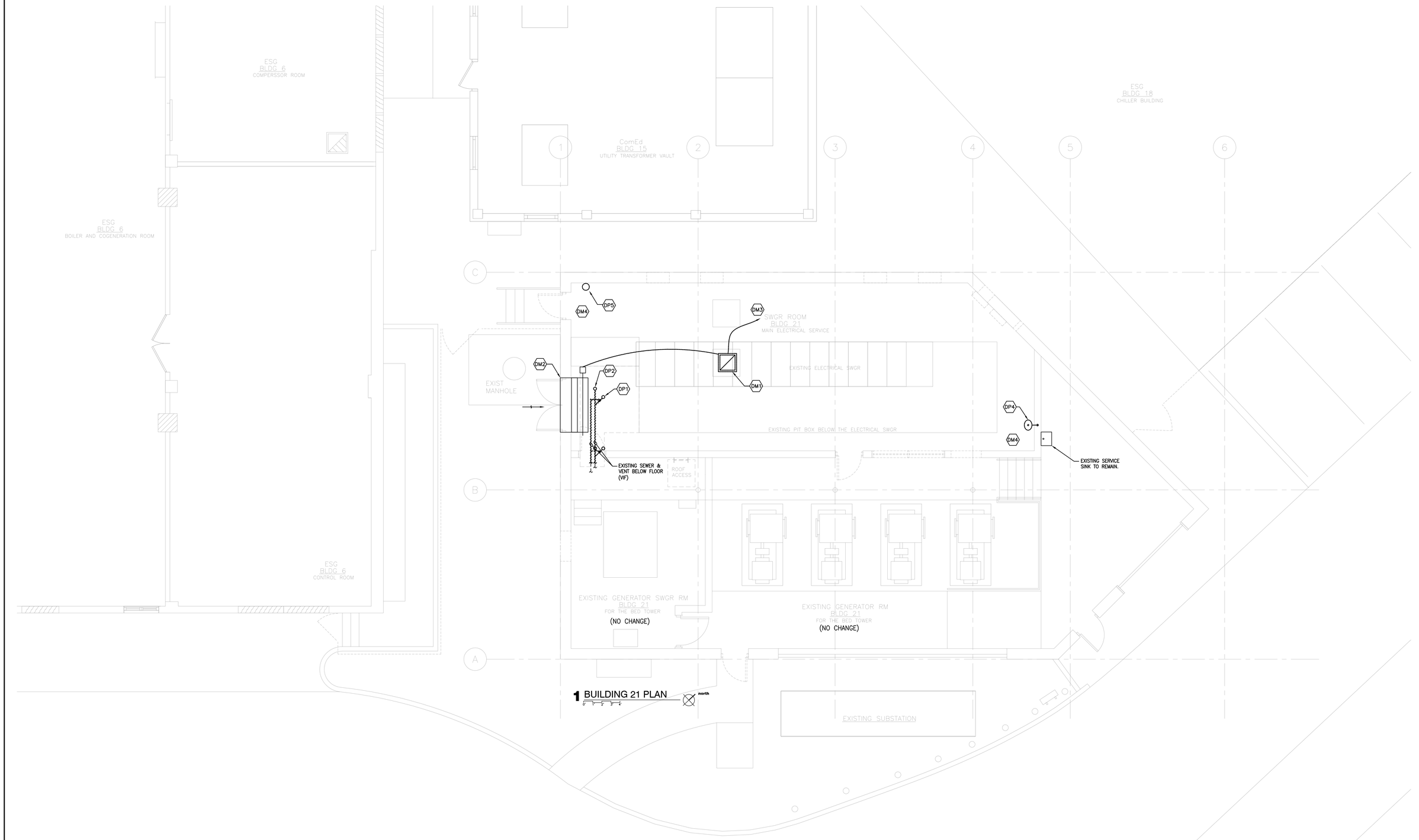
Drawing Number: 537-21-MP-100

Dwg. 5 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

ISSUED FOR SOLICITATION	5 MAY 2014
Revisions:	Date

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www.exp.com

Drawing Title: MECHANICAL/PLUMBING DEMOLITION FLOOR PLAN - MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: MC

Project Number: 537-14-110

Building Number: 21

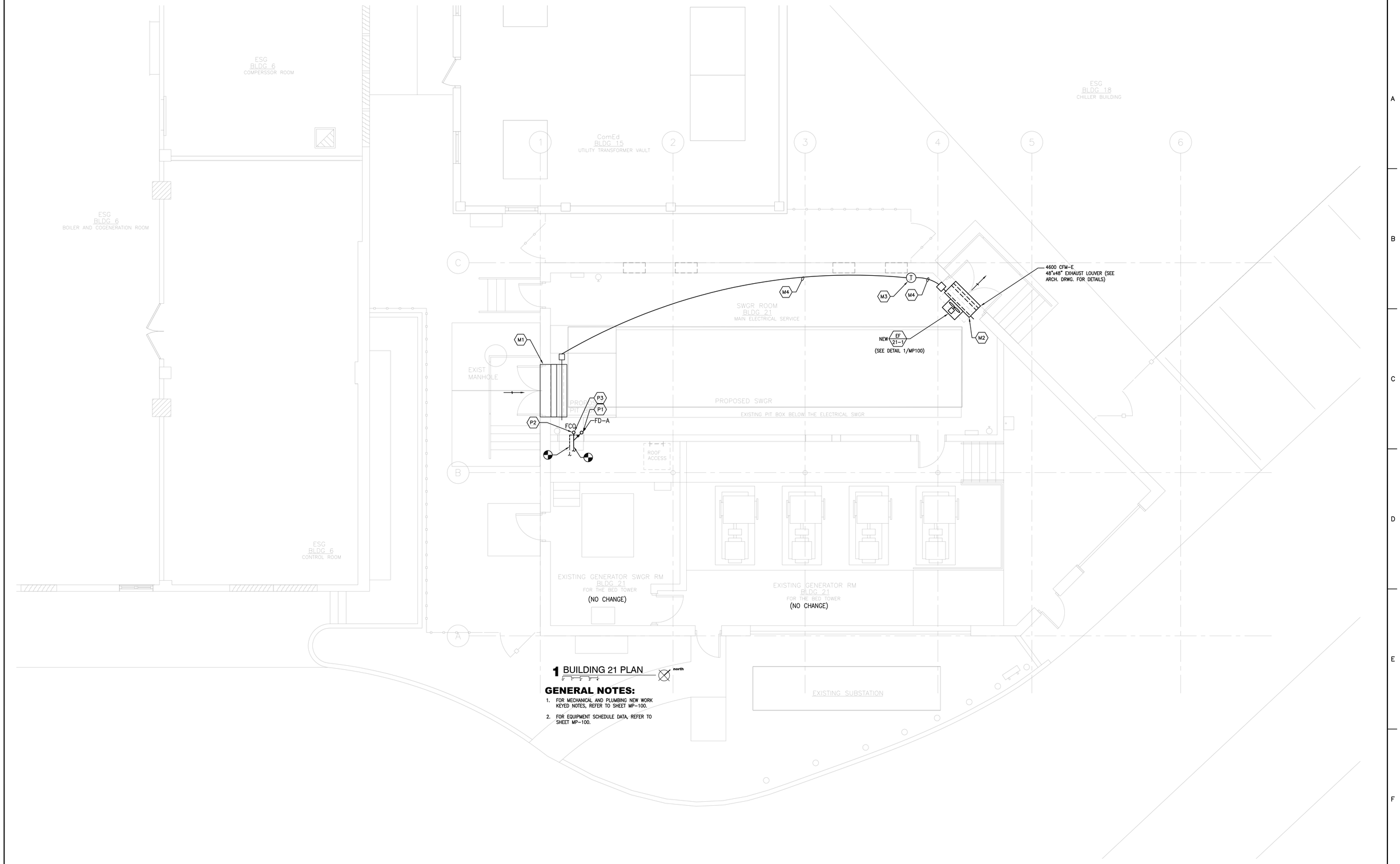
Drawing Number: 537-21-MP-101

Dwg. 6 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 BUILDING 21 PLAN

north

GENERAL NOTES:

1. FOR MECHANICAL AND PLUMBING NEW WORK KEYED NOTES, REFER TO SHEET MP-100.
2. FOR EQUIPMENT SCHEDULE DATA, REFER TO SHEET MP-100.

three inches = one foot
one and one half inches = one foot
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ISSUED FOR SOLICITATION	5 MAY 2014
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Drawing Title: MECHANICAL/PLUMBING FLOOR PLAN MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: MC

Project Number: 537-14-110

Building Number: 21

Drawing Number: 537-21-MP-102

Dwg. 7 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

ABBREVIATIONS

ABBREV.	DESCRIPTION
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
ACL	ACROSS THE LINE
AC	ALTERNATING CURRENT
A/AMP	AMPERE
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BAL	BALLAST
BH	BASEBOARD HEATER
BPS	BOLTED PRESSURE SWITCH
BR	BRANCH
BRKR	BREAKER
CAB	CABINET
CATV	CABLE TELEVISION
C.B.	CIRCUIT BREAKER
CCT	CIRCUIT
CCTV	CLOSED CIRCUIT TELEVISION
CEC	CHICAGO ELECTRICAL CODE
COAX	COAXIAL
C.U.	COEFFICIENT OF UTILIZATION
CR	CARD READER
CRI	COLOR RENDERING INDEX
C	CONDUIT
CONN	CONNECTION
CU	COPPER
CUH	CABINET UNIT HEATER
CT	CURRENT TRANSFORMER
HZ	HERTZ (CYCLES/SECOND)
DC	DIRECT CURRENT
DISC	DISCONNECT SWITCH
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DT	DUST TIGHT
EF	EXHAUST FAN
ELEC	ELECTRIC
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING (THIN WALL CONDUIT)
EQ	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
EP	EXPLOSION PROOF
FPB	FAN POWERED BOX
FA	FIRE ALARM
FB	FLOOR BOX
FLUOR	FLUORESCENT
F	FUSE
F.S.	FUSED SWITCH
GRD/G	GROUND
GFCI/GFI	GROUND FAULT CIRCUIT INTERRUPTER
GHW/HWC	GALVANIZED HEAVY WALL STEEL CONDUIT
HV	HIGH VOLTAGE
HP	HORSE POWER
INCAND	INCANDESCENT
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE GRADE CONDUIT
JB	JUNCTION BOX
K	KELVIN TEMPERATURE
KCMIL	THOUSAND CIRCULAR MILS
KW	KILOWATT
KWH	KILOWATT–HOUR
KVA	KILOWATT–AMPERE
LTG	LIGHTING
LV	LOW VOLTAGE
MH	MANHOLE
MC	MOMENTARY CONTACT
MFR	MANUFACTURER
MV	MULTI VAPOR
MERC.	MERCURY VAPOR
MTR	MOTOR
MCC	MOTOR CONTROL CENTER
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NEUT	NEUTRAL
NC	NORMALLY CLOSED
NF	NON–FUSED
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PF	POWER FACTOR
PNL	PANEL
PH	PHASE
PT	POTENTIAL TRANSFORMER
PWR	POWER
PRI	PRIMARY
PB	PULL BOX
RECP	RECEPTACLE
SCR	SHORT CIRCUIT RATING
SEC	SECONDARY
SC	SHORT CIRCUIT
SP	SINGLE POLE
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STA	STATION
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
T	THERMAL OVERLOAD
TC	TERMINAL CABINET
TTC	TELEPHONE TERMINAL CABINET
TYP	TYPICAL
TL	TWIST LOCK
UL	UNDERWRITER'S LABORATORIES
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTED POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
VP	VAPORPROOF
VT	VAPORTIGHT
V	VOLT
VA	VOLT–AMPERE
WT	WATERTIGHT
W	WATT
WP	WEATHERPROOF
XFMR	TRANSFORMER

FIRE ALARM

Symbol	Description
A	AUDIBLE GENERAL ALARM DEVICE
AV	AUDIBLE GENERAL ALARM DEVICE WITH VISUAL ALARM DEVICE
S	VOICE COMMUNICATION SPEAKER
SV	VOICE COMMUNICATION SPEAKER WITH VISUAL ALARM DEVICE
T	VOICE COMMUNICATION TELEPHONE
V	VISUAL ALARM DEVICE
RA	REMOTE ANNUNCIATOR LAMP FOR SELECTED DEVICES
RAT	REMOTE ALARM AND TEST STATION
D	HEAT DETECTOR (135 DEG FIXED TEMP/RATE–OF–RISE), IF DIFFERENT TEMPERATURE THEN AS NOTED
SD	SYSTEM SMOKE DETECTOR
S	MANUAL PULL STATION
WF	SPRINKLER WATERFLOW INDICATOR

LIGHTING CONTROL

LIGHT SWITCH, SINGLE POLE UNLESS NOTED OTHERWISE:

"3a"	CIRCUIT AND SWITCH LEG
"K"	KEY OPERATED
"MC"	MOMENTARY CONTACT
"PL"	PLOT LIGHT
"WP"	WEATHERPROOF
"2P"	TWO POLE
"3P"	THREE POLE
"3W"	THREE–WAY
"4W"	FOUR–WAY

SECURITY

Symbol	Description
CR	DOOR ACCESS CARD READER
ES	DOOR ELECTRIC STRIKE
EL	DOOR ELECTRIC LATCH
FC	FIXED CAMERA
PTZ	PAN TILT ZOOM CAMERA

LIGHTING

Symbol	Description
F1 3a	2' X 4' FLUORESCENT LIGHTING FIXTURE
F1 3a	2' X 2' FLUORESCENT LIGHTING FIXTURE
F1 3a	1' X 4' FLUORESCENT LIGHTING FIXTURE
F1 3a	FLUORESCENT STRIP/WRAPAROUND/TASK LIGHTING FIXTURE–LENGTH AS INDICATED
F1 3a	FLUORESCENT WALL BRACKET – LENGTH AS INDICATED
F1 3a	WALL MOUNTED LIGHTING FIXTURE

EMERGENCY LIGHTING

F1 3 — LIGHTING FIXTURE ON EMERGENCY CIRCUITRY

X3 X3 — EXIT SIGNS: DIRECTIONAL SIGN NUMBERS INDICATE INSCRIPTION, ARROWS, AND SINGLE OR DOUBLE FACED AS SHOWN IN THE FOLLOWING SCHEDULE:

SINGLE FACE		DOUBLE FACE	
"#1"	FIRE ESCAPE	"#13"	EXIT – RECESSED
"#2"	STAIRS	"#14"	TRIANGLE
"#3"	EXIT	"#15"	ELEVATOR
"#4"	FIRE ESCAPE →	"#16"	FIRE ESCAPE
"#5"	STAIRS →	"#17"	STAIRS
"#6"	EXIT →	"#18"	EXIT
"#7"	FIRE ESCAPE ←	"#19"	FIRE ESCAPE ⇉
"#8"	STAIRS ←	"#20"	STAIRS ⇉
"#9"	EXIT ←	"#21"	EXIT ⇉
"#10"	FIRE ESCAPE ←→	"#22"	FIRE ESCAPE ⇇⇉
"#11"	STAIRS ←→	"#23"	STAIRS ⇇⇉
"#12"	EXIT ←→	"#24"	EXIT ⇇⇉

BATTERY PACK FIXTURES WITH NUMBER OF HEADS SHOWN

BLDG AUTOMATION (BAS)

Symbol	Description
BAS	TEMPERATURE SENSOR AT THE CEILING

GENERAL ELECTRICAL

CONDUIT RUN CONCEALED IN CEILING OR WALL
CONDUIT RUN CONCEALED IN OR BELOW FLOOR
CONDUIT RUN EXPOSED ON CEILING OR WALL

ARROWHEAD DENOTES HOMERUN TO PANELBOARD. SLASH LINES INDICATE QUANTITY OF WIRE; NEUTRAL WIRE SHOWN AS A LONG LINE, PHASE WIRES AND SWITCH LEGS SHOWN AS SHORT LINES, AND GROUND WIRE SHOWN AS A LONG LINE WITH A DOT.

1P–120V HOMERUN — 1P–277V HOMERUN
2P–208V HOMERUN — 2P–480V HOMERUN
3P–208V HOMERUN — 3P–480V HOMERUN

CONDUIT, WHERE X IS THE TYPE OR FUNCTION OF CONDUIT.

"C"	CLOCK	"LV"	LOW VOLTAGE
"CO"	CONDUIT ONLY	"NC"	NURSE CALL
"CCTV"	CCTV	"S"	SOUND
"D"	DATA	"T"	TELEPHONE
"FA"	FIRE ALARM	"TV"	TELEVISION
"FO"	FIBER OPTIC	"TVA"	TELEVISION ANTENNA
"I"	INTERCOM	"TVC"	CABLE TELEVISION
"LP"	LIGHTNING PROTECTION		

CONDUIT ENCASED IN CONCRETE
CONDUIT STUBBED IN
CONDUIT STUBBED UP
CONDUIT STUBBED DOWN
FLEXIBLE CONDUIT
CONDUIT TERMINATION:

"CS"	CAP AND STAKE
"GB"	GROUNDING BUSHING
"IB"	INSULATING BUSHING
"TB"	TERMINAL BUSHING

Symbol	Description
MH	MANHOLE
HH	HANDHOLE
PB	PULL BOX
J	JUNCTION BOX – EXPOSED OR IN CEILING
J	JUNCTION BOX – WALL MOUNTED
J	JUNCTION BOX WITH FLEXIBLE CONDUIT AND FINAL CONNECTION TO EQUIPMENT

MISCELLANEOUS

Symbol	Description
1 1	SEE KEY NOTE #1
X/X	STANDARD DETAIL NUMBER DESIGNATION
	PANEL DEMARCATION LINES

SYMBOL TAGS

"X" EXISTING TO REMAIN
"R" TO REMOVE
"XR" EXISTING TO BE RELOCATED
"RX" NEW LOCATION FOR EXISTING
NEW WORK
EXISTING WORK TO REMAIN (EXCEPT AS OTHERWISE NOTED)
EXISTING WORK TO BE REMOVED (EXCEPT AS OTHERWISE NOTED)

SIGNAL/SECURITY

	WALL
TELEPHONE OUTLET	
DUPLEX TELEPHONE OUTLET	
DATA SYSTEMS OUTLET	
DUPLEX DATA SYSTEMS OUTLET	
COMBINATION TELEPHONE/DATA SYSTEMS OUTLET	

POWER

	WALL
DUPLEX RECEPTACLE	
DOUBLE DUPLEX RECEPTACLE	
DUPLEX RECEPTACLE – SPLIT WIRED	
SINGLE RECEPTACLE	
SPECIAL RECEPTACLE–NEMA TYPE AS INDICATED	

WP 3a — ADJACENT LETTERS IN THE SYMBOLS ABOVE INDICATE THE FOLLOWING:

"AFCI"	ARC FAULT CIRCUIT INTERRUPTER
"EM"	FED BY EMERGENCY CIRCUIT
"EP"	EXPLOSION PROOF
"EWC"	SERVES ELECTRIC WATER COOLER (GFCI)
"GFCI"	GROUND FAULT CIRCUIT INTERRUPTER
"IG"	ISOLATED GROUND
"SS"	SURGE SUPPRESSION DEVICE
"TR"	TAMPER RESISTANT (SAFETY TYPE)
"TVSS"	TRANSIENT VOLTAGE SURGE SUPPRESSION
"WP"	WEATHER RESISTANT (WHILE IN USE)
"XX"	CIRCUIT NUMBER

XX T — MANUAL MOTOR CONTROL

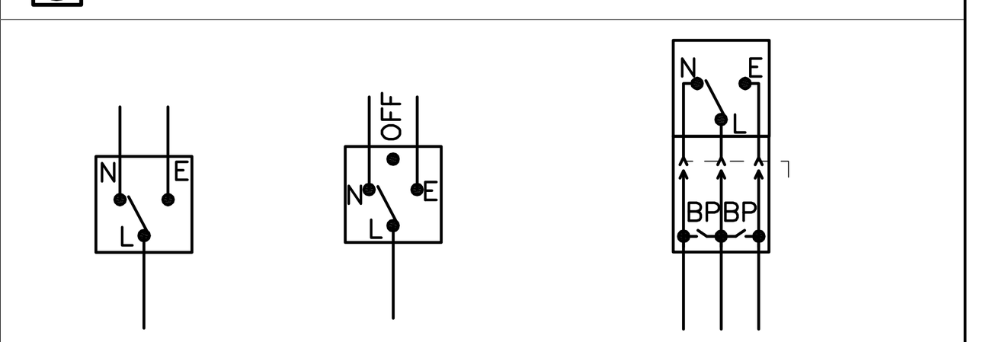
"K"	KEY OPERATED
"M"	LOCKOUT MOTOR SWITCH
"P"	PILOT LIGHT
"RD"	USER REMOTE DISCONNECT SWITCH
"T"	THERMAL OVERLOAD PROTECTION
"XX"	CIRCUIT NUMBER
"2P"	2 POLE SWITCH
"3P"	3 POLE SWITCH

LIGHTNING PROTECTION AIR TERMINAL

GROUNDING ROD
"GW" GROUNDWELL
"GTS" GROUND TEST STATION

INDICATES HP OR LOAD
MOTOR
10 — SF 1
INDICATES BRANCH CIRCUIT ORIGINATION — H–MCC–B–E–1/2 — CIRCUIT NUMBER

Symbol	Description
A CB	CIRCUIT BREAKER IN ENCLOSURE, "A" INDICATES AMPERE RATING OF BREAKER
AS	NON–FUSED DISCONNECT SWITCH, "AS" INDICATES AMPERE RATING OF SWITCH
AS/AF	FUSED DISCONNECT SWITCH "AS" INDICATES AMPERE RATING OF SWITCH AND "AF" INDICATES AMPERE RATING OF FUSE
	MAGNETIC MOTOR STARTER – NEMA SIZE AS INDICATED
AT CB	COMBINATION MOTOR STARTER AND CIRCUIT BREAKER "AT" INDICATES AMPERE RATING OF BREAKER
AS	COMBINATION MOTOR STARTER AND NON–FUSED DISCONNECT, "AS" INDICATES AMPERE RATING OF SWITCH
AS/AF	COMBINATION MOTOR STARTER AND FUSED DISCONNECT "AS" INDICATES AMPERE RATING OF SWITCH AND "AF" INDICATES AMPERE RATING OF FUSE
C	CONTACTOR
45	600V CLASS DRY TYPE TRANSFORMER NUMBER INDICATES KVA RATING
PDQ 13	EQUIPMENT IDENTIFICATION TAG
M	UTILITY ELECTRIC METER



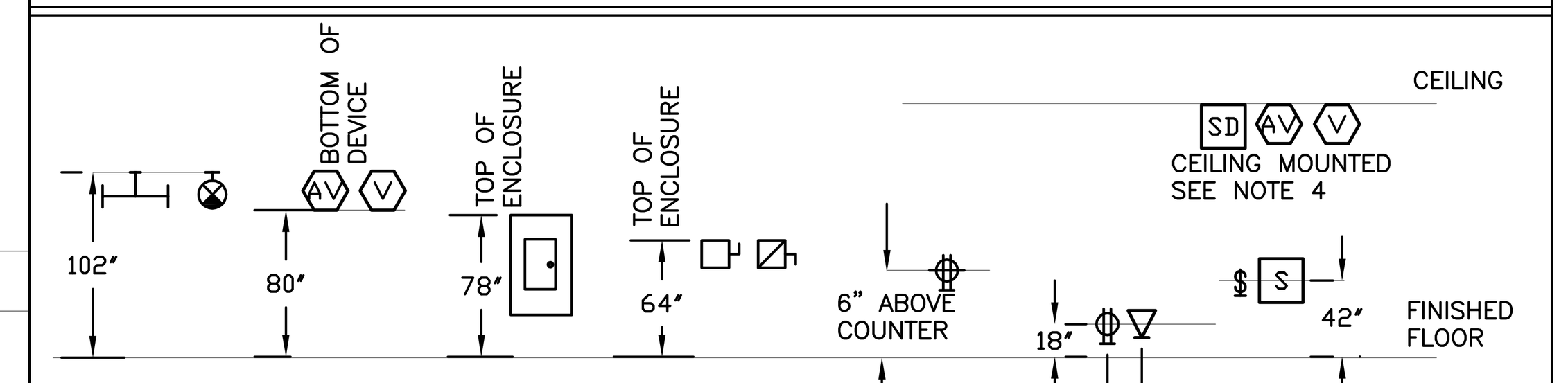
AUTOMATIC TRANSFER SWITCH — AUTOMATIC TRANSFER SWITCH WITH CENTER OFF POSITION — AUTOMATIC TRANSFER SWITCH WITH BY–PASS ISOLATION SWITCH

	SURFACE MOUNTED DISTRIBUTION PANELBOARD
	SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD
	RECESSED MOUNTED BRANCH CIRCUIT PANELBOARD

SINGLE LINE DIAGRAM

Symbol	Description	Symbol	Description
	INCOMING LINE (CABLE LUGS)		3 PHASE WYE OR STAR UNGROUNDED
	POLY PHASE TRANSFORMER		3 PHASE WYE, GROUNDED NEUTRAL
		MPR	MICROPROCESSOR MOTOR PROTECTION DEVICE
	POTENTIAL TRANSFORMER		MOTOR OVERLOAD
	CURRENT TRANSFORMER	MMD	MICROPROCESSOR METERING DEVICE
	GROUND	A	AMMETER
	MOLDED CASE CIRCUIT BREAKER	V	VOLTMETER
	CONTACTOR	KWH	KILOWATT HOUR METER
	SINGLE THROW SWITCH	AS	AMMETER SWITCH
	DOUBLE THROW SWITCH	VS	VOLTMETER SWITCH
	CIRCUIT BREAKER		DRAWOUT POWER CIRCUIT BREAKER
	FUSE		FUSIBLE DRAWOUT MOTOR STARTER
	FUSIBLE ELEMENT		CIRCUIT BREAKER DRAWOUT MOTOR STARTER
	SURGE ARRESTOR	K 1	KEY INTERLOCK DEVICE, NUMBER INDICATES POSITION
	BASIC RELAY	GFI	GROUND FAULT PROTECTION
	3 PHASE DELTA CONNECTION	0000NG	FEEDER TAG
	3 PHASE, 3 WIRE, DELTA GROUNDED	GEN	GENERATOR

DEVICE MOUNTING HEIGHT DETAIL



GENERAL NOTES:

1. HEIGHTS SHOWN ARE TYPICAL TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE. ALL DUPLEX RECEPTACLES SHALL BE MOUNTED HORIZONTALLY, GROUND TO THE RIGHT.
2. WHEREVER DEVICES ARE INDICATED TO BE MOUNTED ABOVE DOORS, DEVICE SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS, ELECTRICAL PLANS OR ELSEWHERE, SHALL GOVERN OVER THOSE SHOWN ABOVE.
4. LOCATE CEILING MOUNTED APPLIANCES ON BOTTOM OF BEAMS OR JOISTS, WITH CLEAR LINE OF SIGHT IN ALL DIRECTIONS, NO GREATER THAN 30 FT. A.F.F.

EXECUTIVE SUMMARY / NARRATIVE OF THE WORK

TASKS ARE IN SUPPORT OF THE REPLACEMENT MAIN ELECTRICAL SERVICE EQUIPMENT FOR THE ENTIRE JB VAMC CAMPUS.

TASKS INCLUDE COORDINATING WITH THE ELECTRICAL UTILITY AND THE EXISTING COGENERATION SYSTEM OPERATOR. ALL WORK DONE IN VICINITY OF A FULLY FUNCTIONAL COGENERATION PLANT AND COMED ELECTRICAL UTILITY VAULT. MOST WORK OCCURS IN THE MAIN ELECTRICAL SERVICE ROOM WITH 4160 VOLT EQUIPMENT THAT WILL REMAIN OPERATIONAL (POWERS THE ENTIRE JB VAMC CAMPUS). MORE DETAILS ARE OUTLINED ON THE BASIS OF DESIGN ELECTRICAL SHEETS.

REFER THE PLANS AND SPECS FOR ALL TRADES FOR ADDITIONAL REQUIREMENTS

GENERAL NOTES

GENERAL NOTES

1. ACCESS FOR BUILDING 21 SHALL BE LIMITED TO THE MAIN ELECTRIC SERVICE AREA:
   - 1.1. THIS MAIN ELECTRICAL EQUIPMENT SERVICES ALL THE BUILDINGS ON THE JB VAMC CAMPUS. ALL SHUTDOWNS AND CHANGE OVERS ARE TO BE SCHEDULED FOR SUNDAY AND ONLY AFTER WRITTEN PERMISSION BY VA COTR. THE CONTRACTOR SHALL TAKE SPECIAL NOTE OF THIS REQUIREMENT DURING PLANNING.
   - 1.2. THE EXISTING GENERATORS INSIDE BUILDING 21 PROVIDES BACKUP POWER TO THE BED TOWER BUILDING 40 AND OPERATING ROOMS. ACCESS TO THESE AREAS BY PERMISSION OF THE VA COTR. DO NOT USE THE BUILDING 21 GENERATOR OR GENERATOR EQUIPMENT AREAS UNLESS WRITTEN PERMISSION BY THE VA COTR.
2. THE CONTRACTOR SHALL PROVIDE AN 8 FOOT HIGH LOCKED CONSTRUCTION FENCE THAT COMPLETELY SECURES THE WORK AREA. INCLUDE TEMPORARY OUTDOOR FLOOD LIGHTING FOR NOT LESS THAN 3 FC MINIMUM. THIS AREA / SITE WILL ATTRACT UNAUTHORIZED VISITORS AND THE CONTRACTOR MUST ALWAYS MAINTAIN A LOCKED SECURE AREA REGARDLESS IF WORKERS ARE PRESENT. ALL GATES / OPENINGS ARE TO MANNED WHEN OPEN. PROVIDE KEYS TO ALL AUTHORIZED CONTRACTOR STAFF AND 12 FOR USE BY THE VA,
3. THE CONTRACTOR SHALL RESTRICT ACCESS TO BUILDING 21 TO ANY PERSONS, CONTRACTOR, VISITOR OR VA THAT HAVE NOT RECEIVED AWARENESS TRAINING FROM THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE THIS TRAINING AND TRAINING LOG. IMMEDIATELY REPORT ANY UNAUTHORIZED PERSONS TO THE JB VAMC POLICE AND THE CONTRACTING OFFICER. THIS AREA CONTAINS AN UNUSUALLY HIGH ARC FLASH PPE REQUIREMENT THAT IS NOT COMMON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A SAFETY AND AWARENESS PLAN AND ENFORCING SAME. INCLUDE SUPPLEMENTAL TRAINING SESSIONS AS REQUESTED BY COTR AS STAFF AND VISITORS CHANGE OVER THE DURATION OF THE PROJECT AS WELL AS THOSE PREVIOUSLY TRAINED WILL REQUIRE REFRESHER TRAINING.
4. COORDINATE WITH JB VAMC AND THE VA WILL REPLACE THE EXISTING DOOR LOCK CORES FOR THE MAIN SERVICE AREA IN BUILDING 21 WITH CONSTRUCTION CORES. BOTH THE CONTRACTOR AND THE VA SHALL HAVE ACCESS TO THIS AREA. AT THE COMPLETION OF THE CONSTRUCTION THE CONTRACTOR SHALL PROVIDE FINAL CORES WHICH WILL BE KEYED TO JB VAMC STANDARD.
5. THE CONTRACTOR WILL PLAN AND COORDINATE THE SHUTDOWN AND CHANGEOVER WORK WITH COMED, ESG AND THE VA.
   - 5.1. TOTAL PEAK SUMMER ELECTRICAL LOADS WITH THE CAMPUS CHILLERS, ETC. ARE TOO LARGE FOR ONE SOURCE OF UTILITY CURRENT SUPPLY AND NO SHUTDOWNS OR CHANGEOVERS WILL BE ACCOMMODATED FROM 1 JUNE THROUGH 30 OCTOBER. THIS LIMITATION WAS SET BY COMED DISTRIBUTION WHILE CONSIDERING THE LOAD ON THEIR DISTRIBUTION LINES.
   - 5.2. ALL SHUTDOWNS AND CHANGEOVER DATES WILL BE APPROVED BY THE VA IN WRITING, THIS IS IN ADDITION TO THE APPROVED CPM SCHEDULE
   - 5.3. ALL ELECTRICAL EQUIPMENT SHALL BE OPERATED BY THE CONTRACTOR FOR SHUTDOWNS AND CHANGEOVERS, HOWEVER ONLY WITH BOTH VA AND ESG STAFF ON SITE AND IN ATTENDANCE.
   - 5.4. SHUTDOWNS AND CHANGEOVERS ONLY ON SUNDAY AND ARRANGE THE WORK TO MINIMIZE DOWNTIME. PROVIDE REPLACEMENT DIESEL FUEL FOR THREE 750KVA GENERATOR UNITS IN BUILDING 21 AND TWO 2000KVA GENERATOR UNITS IN BUILDING 42. SIZE THE QUANTITY OF FUEL BASED ON 65% LOAD ON THE GENERATORS FOR EVERY SHUTDOWN. THE VA WILL PROVIDE OPERATORS FOR THE GENERATORS.
6. THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL UTILITY SYSTEM PROVIDER NAMED COMED: GREGORY TOPPS GREGORY.TOPPS@COMED.COM
   - 6.1. THE CONTRACTOR SHALL PROVIDE THE WORK IN THE COMED VAULT AS SHOWN IN PLAN. REMOVE EXISTING DEVICES AND PROVIDE REQUIRED VAULT LIGHTING, VAULT POWER, REPLACE THE CUSTOMER FEEDER, ETC.
   - 6.2. COORDINATE WITH COMED FOR THE SHUTDOWNS AND CHANGEOVERS AND PROVIDE NECESSARY SWITCHGEAR SUBMITTALS TO COMED FOR REVIEW AND APPROVAL.
   - 6.3. THE VA WILL CONTRACT COMED DIRECT FOR COMED WATCHMEN AS WELL THE WORK DIRECTLY ON COMED OWNED EQUIPMENT AND TRANSFORMERS INSIDE THE VAULT FOR THIS PROJECT, ALL OTHER WORK INSIDE THE VAULT AND COSTS SHALL BE INCLUDED BY THE CONTRACTOR, REFER TO THE PLANS AND SPECIFICATIONS FOR ADDITIONAL DETAILS.
   - 6.4. THE CONTRACTOR SHALL COORDINATE ALL WORK IN THE COMED VAULT, IN ADDITION, COORDINATE WITH COMED TO PROVIDE ACCESS AND COMED WATCHMAN.
   - 6.5. ALL CONDUIT OF ANY SIZE SHALL IN THE COMED VAULT SHALL BE THREADED RIGID WITH GROUNDING WIRE.
   - 6.6. ARRANGE THE WORK TO MINIMIZE SHUTDOWNS.
   - 6.7. COORDINATE THE WORK TO AVOID AN ESTIMATED ELECTRIC BILL.
   - 6.8. COORDINATE THE WORK SO NOT TO PROVIDE ADDITIONAL COMED CHARGES.
7. THE CONTRACTOR SHALL COORDINATE WITH THE COGENERATION SYSTEM OPERATOR WHICH IS NAMED ENERGY SERVICES GROUP (ESG) PAUL LEJA, LEAD TECHNICAL SPECIALIST, 3001 GREENBAY ROAD, NORTH CHICAGO, IL 60064, PLEJA@ENERGYSYSTEMSGROUP.COM
   - 7.1. THE CONTRACTOR SHALL PROVIDE THE POWER, THE CONTROL WORK AND ACCEPTANCE TESTING IN THE ESG BUILDING AS SHOWN IN PLAN. THE VA WILL CONTRACT DIRECT WITH ESG TO PROVIDE WATCHMAN AND THE STAFF NEEDED TO OPERATE THE COGENERATION PLANT. ALL OTHER WORK INSIDE THE ESG BUILDING SHALL PROVIDED BY THE CONTRACTOR.
   - 7.2. PROVIDE REQUIRED SUBMITTALS TO ESG. FOR REVIEW AND APPROVAL
   - 7.3. ALL BRANCH CIRCUIT CONDUIT IN INTERIOR DRY LOCATIONS SHALL BE: HWG, IMC OR EMT WITH COMPRESSION FITTINGS. ALL CIRCUITS SHALL HAVE GROUNDING WIRE.
   - 7.4. ALL CONTROL AND/OR POWER FEEDERS OF ANY SIZE SHALL OR VOLTAGE BE THREADED RIGID.
   - 7.5. ESG PROVIDES COGENERATION SERVICES TO THE VA. COORDINATE WITH ESG TO STAGE THE WORK TO AVOID A INTERRUPTION OF COGENERATION POWER.
   - 7.6. COORDINATE THE WORK SO NOT TO PROVIDE ADDITIONAL ESG CHARGES TO THE VA.
8. UNLESS OTHERWISE NOTED ELSEWHERE:
   - 8.5. ALL BRANCH CIRCUIT CONDUIT IN INTERIOR DRY LOCATIONS SHALL BE: HWG WITH THREADED FITTINGS. THESE AREAS AND THIS WORK SURROUNDS THE MAIN ELECTRICAL SERVICE AND EMT OR OTHER RACEWAY SYSTEMS OR FITTING TYPES ARE NOT ACCEPTABLE.
   - 8.1. ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE GROUNDING WIRE.
   - 8.2. ANY EXTERIOR CONDUITS, ALL CONTROL AND/OR ALL POWER FEEDERS SHALL BE THREADED RIGID.
9. ALL 4160V CONDUITS SHALL BE PAINTED.
10. STENCILS AND LABELS:
    - 10.1. COLOR: A–SIDE SHALL BE WHITE LETTERS ON BLUE, B–SIDE SHALL BE BLACK LETTERS ON YELLOW.
    - 10.2. PROVIDE ENGRAVED NAMEPLATE ON EVERY MV OCP.
    - 10.3. STENCIL ALL EXPOSED MV CONDUITS EVERY 10 FEET.
    - 10.4. PROVIDE CABLE MARKERS ON ALL MV CABLES IN ALL PULL BOXES, PIT BOXES, HANDHOLES, MANHOLES.
11. PROVIDE FIRE ALARM DEVICES TO MATCH EXISTING. EXTEND EXISTING INITIATION/INDICATION CIRCUITS AND PROVIDE AMPLIFICATION WHERE REQUIRED. ARRANGE THE WORK TO MINIMIZE FORE ALARM SYSTEM SHUTDOWN. PROVIDE CONTINUOUS FIRE WATCH IF THE FIRE ALARM SYSTEM IS OFF FOR MORE THAN 2 HOURS AND/OR UNATTENDED. PROVIDE ADDRESS LABELS ON ALL DEVICES TO MATCH EXISTING BUILDING STANDARD. THE CONTRACTOR SHALL USE SIEMENS INDUSTRY INC. CONTACT BRIAN CULLEN BRIAN.CULLEN@SIEMENS.COM FOR FINAL CONNECTIONS AND FINAL PROGRAMMING.
12. PROVIDE CARD READERS AND ASSOCIATED CONTROLS TO MATCH EXISTING. CONNECT TO THE EXISTING CAMPUS SECURITY DOOR ACCESS CONTROL SYSTEM. THE CONTRACTOR SHALL USE E.NORMAN SECURITY SYSTEMS, INC., JSOCHACKI@ENORMANSECURITY.COM FOR FINAL CONNECTIONS AND PROGRAMMING.
13. PROVIDE BUILDING AUTOMATION AND ASSOCIATED CONTROLS TO MATCH EXISTING. CONNECT TO THE EXISTING CAMPUS BAS SYSTEM. THE CONTRACTOR SHALL USE JOHNSON CONTROLS FOR FINAL CONNECTIONS AND PROGRAMMING
14. PROVIDE TYPED PANEL DIRECTORIES FOR ALL PANELS ADDED OR CHANGED.
15. ALL WIRE (INCLUDING TEMPORARY) SHALL BE CU. AL WIRE WILL NOT BE ALLOWED.
16. ALL BUS 1000A PER SQIN CU MIN. HEAT TREATED, VENTILATED, DERATED. AL BUS IS NOT ALLOWED.
17. THE CRAWL SPACES ARE 'PERMIT REQUIRED CONFINED SPACE' AND VERY DIFFICULT TO WORK IN.
18. ALL EXISTING MANHOLES HAVE WATER. INCLUDE PUMPING MANHOLES DRY, APPROXIMATELY 12 LOCATIONS.
19. ALL FEEDERS AND BRANCH CIRCUITS SHALL BE PROVIDED WITH AN EQUIPMENT GROUNDING CONDUCTOR.
20. THE CONTRACTOR STAFF FOR THIS PROJECT SHALL NOT ACCESS THE EXISTING BUILDINGS DURING NON–REGULAR VA BUSINESS HOURS UNLESS PERMISSION FROM THE COTR. THE CONTRACTOR SHALL PROVIDE TEMPORARY PORTABLE TOILETS IN THE CONSTRUCTION WORK AREA.

Revisions:	Date
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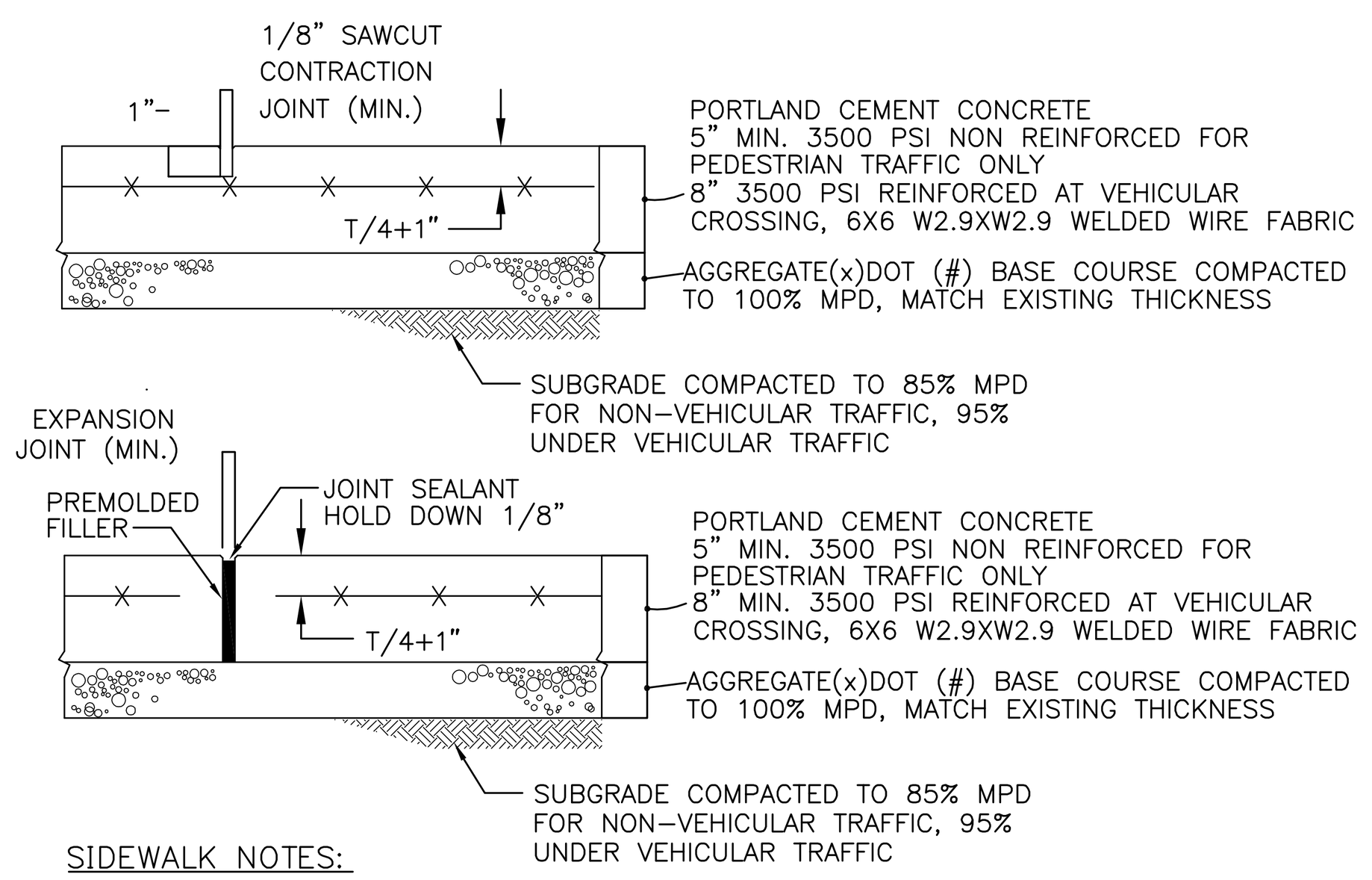
Drawing Title: ELECTRICAL SYMBOLS AND GENERAL NOTES
Approved: Project Director
Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21
Location: JESSE BROWN V.A.M.C.
Date: 7 JAN 2014 | Checked: MS | Drawn: JC
Project Number: 537-14-110
Building Number: 21
Drawing Number: 537-21-EGI-000
Dwg. 8 of 16

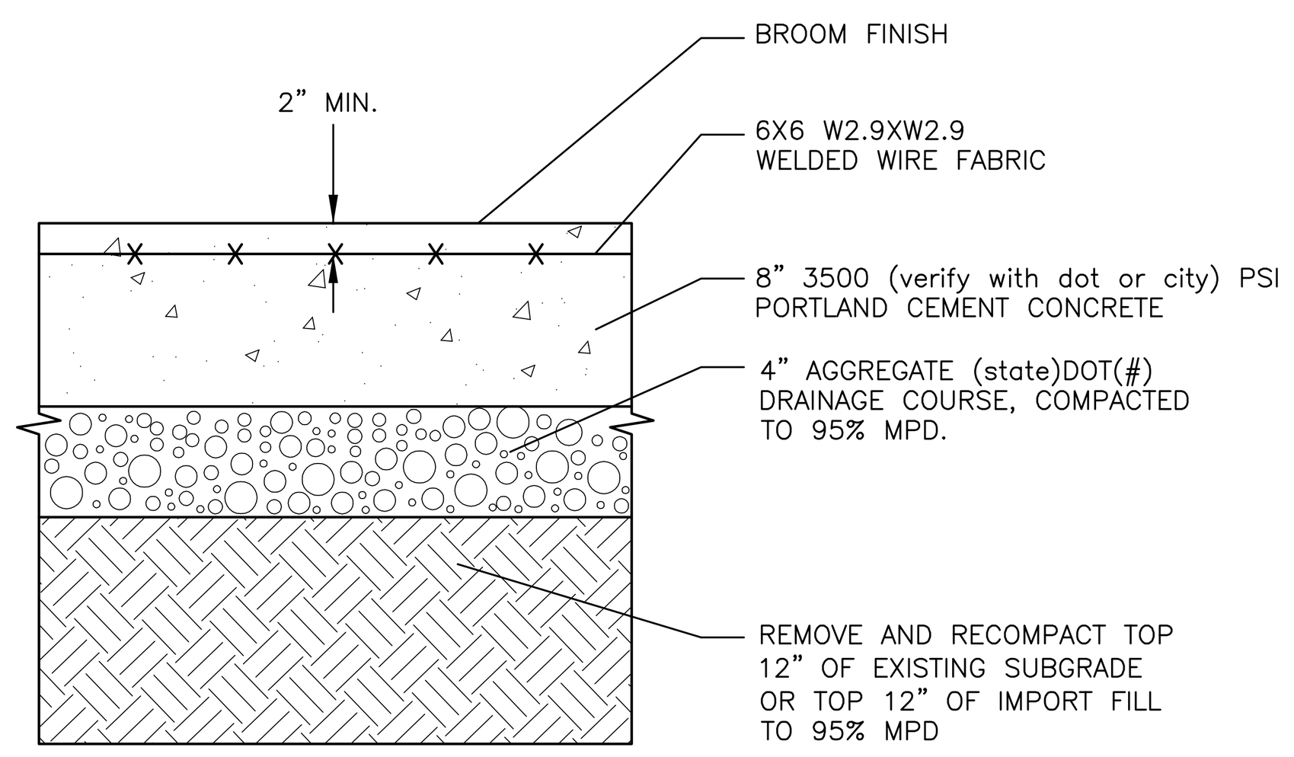
Office of Construction and Facilities Management
Department of Veterans Affairs



SIDEWALK NOTES:

1. WIDTH & THICKNESS TO MATCH EXISTING CONDITIONS.
2. MAXIMUM TRAVEL SLOPE SHALL NOT EXCEED 5% (20:1).
3. MAXIMUM CROSS SLOPE & AT LANDINGS SHALL BE 2% (50:1).
4. AGGREGATE BASE COURSE SHALL BE MECHANICALLY COMPACTED.
5. SIDEWALK SHALL BE PROMPTLY BACKFILLED AND PROTECTED FROM DAMAGE.
6. SIDEWALK SHALL HAVE A BROOM FINISH.
7. UNLESS OTHERWISE NOTED, CONTRACTION JOINTS TO BE 5' O.C.
8. UNLESS OTHERWISE NOTED, EXPANSION JOINTS TO BE 50' O.C., ABUTTING CURB, OTHER WALKS OR STRUCTURES, AND CHANGES OF DIRECTION.

1 SIDEWALK PATCH DETAIL
N.T.S.



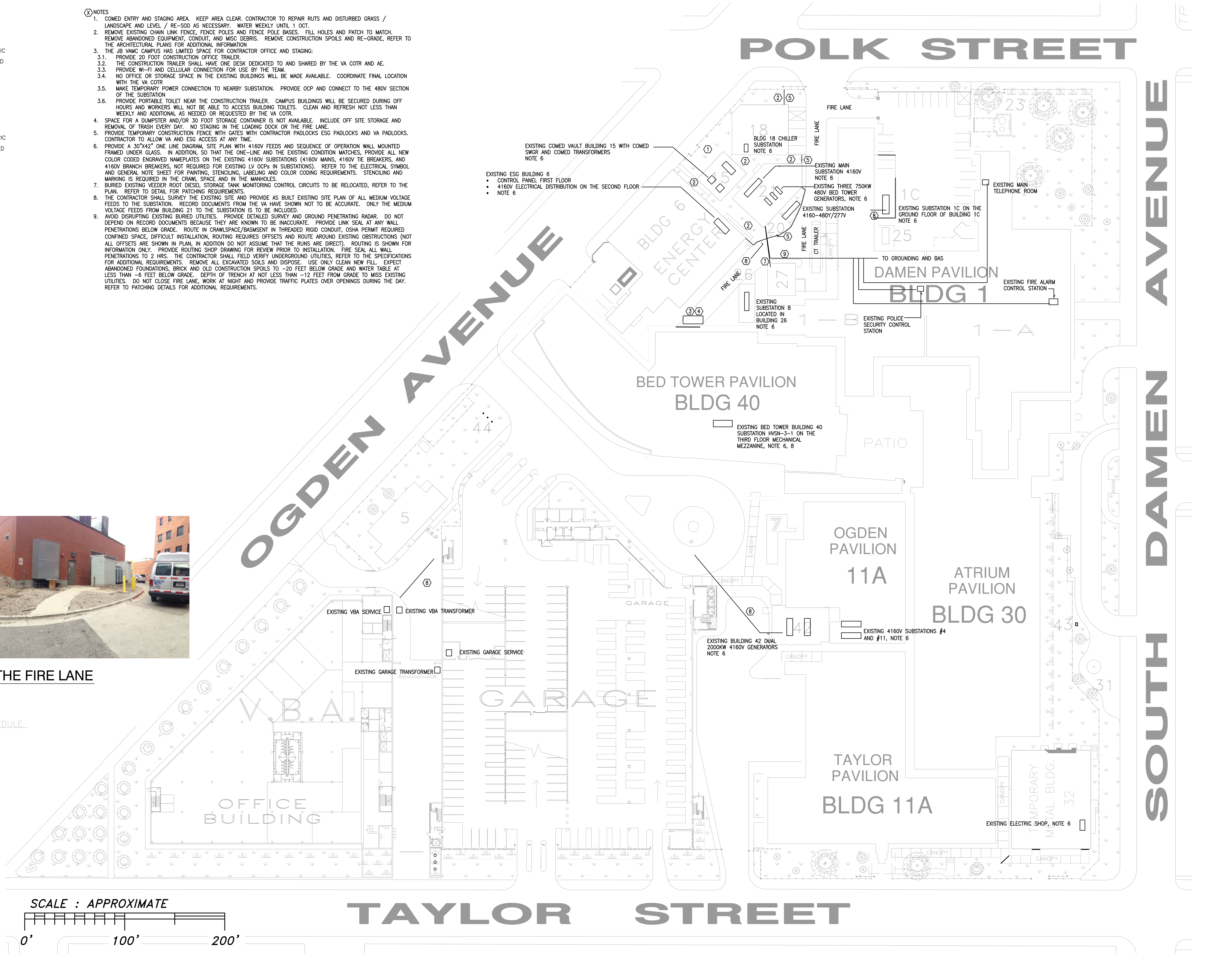
2 RIGID PAVEMENT PATCH DETAIL
N.T.S.

3 VIEW LOOKING TOWARD OGDEN FROM THE FIRE LANE
N.T.S. LEFT BLDG 18 ESG
RIGHT BLDG 21 SWGR

(X) NOTES
1. COMED ENTRY AND STAGING AREA. KEEP AREA CLEAR. CONTRACTOR TO REPAIR RUTS AND DISTURBED GRASS / LANDSCAPE AND LEVEL / RE–SOD AS NECESSARY. WATER WEEKLY UNTIL 1 OCT.
2. REMOVE EXISTING CHAIN LINK FENCE, FENCE POLES AND FENCE POLE BASES. FILL HOLES AND PATCH TO MATCH. REMOVE ABANDONED EQUIPMENT, CONDUIT, AND MISC DEBRIS. REMOVE CONSTRUCTION SPOILS AND RE–GRADE, REFER TO THE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION
3. THE JB VAMC CAMPUS HAS LIMITED SPACE FOR CONTRACTOR OFFICE AND STAGING:
   - 3.1. PROVIDE 20 FOOT CONSTRUCTION OFFICE TRAILER.
   - 3.2. THE CONSTRUCTION TRAILER SHALL HAVE ONE DESK DEDICATED TO AND SHARED BY THE VA COTR AND AE.
   - 3.3. PROVIDE WI–FI AND CELLULAR CONNECTION FOR USE BY THE TEAM.
   - 3.4. NO OFFICE OR STORAGE SPACE IN THE EXISTING BUILDINGS WILL BE MADE AVAILABLE. COORDINATE FINAL LOCATION WITH THE VA COTR
   - 3.5. MAKE TEMPORARY POWER CONNECTION TO NEARBY SUBSTATION. PROVIDE OCP AND CONNECT TO THE 480V SECTION OF THE SUBSTATION
   - 3.6. PROVIDE PORTABLE TOILET NEAR THE CONSTRUCTION TRAILER. CAMPUS BUILDINGS WILL BE SECURED DURING OFF HOURS AND WORKERS WILL NOT BE ABLE TO ACCESS BUILDING TOILETS. CLEAN AND REFRESH NOT LESS THAN WEEKLY AND ADDITIONAL AS NEEDED OR REQUESTED BY THE VA COTR.
4. SPACE FOR A DUMPSTER AND/OR 30 FOOT STORAGE CONTAINER IS NOT AVAILABLE. INCLUDE OFF SITE STORAGE AND REMOVAL OF TRASH EVERY DAY. NO STAGING IN THE LOADING DOCK OR THE FIRE LANE.
5. PROVIDE TEMPORARY CONSTRUCTION FENCE WITH GATES WITH CONTRACTOR PADLOCKS ESG PADLOCKS AND VA PADLOCKS. CONTRACTOR TO ALLOW VA AND ESG ACCESS AT ANY TIME.
6. PROVIDE A 30"X42" ONE LINE DIAGRAM, SITE PLAN WITH 4160V FEEDS AND SEQUENCE OF OPERATION WALL MOUNTED FRAMED UNDER GLASS. IN ADDITION, SO THAT THE ONE–LINE AND THE EXISTING CONDITION MATCHES, PROVIDE ALL NEW COLOR CODED ENGRAVED NAMEPLATES ON THE EXISTING 4160V SUBSTATIONS (4160V MAINS, 4160V TIE BREAKERS, AND 4160V BRANCH BREAKERS, NOT REQUIRED FOR EXISTING LV OCPs IN SUBSTATIONS). REFER TO THE ELECTRICAL SYMBOL AND GENERAL NOTE SHEET FOR PAINTING, STENCILING, LABELING AND COLOR CODING REQUIREMENTS. STENCILING AND MARKING IS REQUIRED IN THE CRAWL SPACE AND IN THE MANHOLES.
7. BURIED EXISTING VEEDER ROOT DIESEL STORAGE TANK MONITORING CONTROL CIRCUITS TO BE RELOCATED, REFER TO THE PLAN. REFER TO DETAIL FOR PATCHING REQUIREMENTS.
8. THE CONTRACTOR SHALL SURVEY THE EXISTING SITE AND PROVIDE AS BUILT EXISTING SITE PLAN OF ALL MEDIUM VOLTAGE FEEDS TO THE SUBSTATION. RECORD DOCUMENTS FROM THE VA HAVE SHOWN NOT TO BE ACCURATE. ONLY THE MEDIUM VOLTAGE FEEDS FROM BUILDING 21 TO THE SUBSTATION IS TO BE INCLUDED.
9. AVOID DISRUPTING EXISTING BURIED UTILITIES. PROVIDE DETAILED SURVEY AND GROUND PENETRATING RADAR. DO NOT DEPEND ON RECORD DOCUMENTS BECAUSE THEY ARE KNOWN TO BE INACCURATE. PROVIDE LINK SEAL AT ANY WALL PENETRATIONS BELOW GRADE. ROUTE IN CRAWLSPACE/BASMSENT IN THREADED RIGID CONDUIT, OSHA PERMIT REQUIRED CONFINED SPACE, DIFFICULT INSTALLATION, ROUTING REQUIRES OFFSETS AND ROUTE AROUND EXISTING OBSTRUCTIONS (NOT ALL OFFSETS ARE SHOWN IN PLAN, IN ADDITION DO NOT ASSUME THAT THE RUNS ARE DIRECT). ROUTING IS SHOWN FOR INFORMATION ONLY. PROVIDE ROUTING SHOP DRAWING FOR REVIEW PRIOR TO INSTALLATION. FIRE SEAL ALL WALL PENETRATIONS TO 2 HRS. THE CONTRACTOR SHALL FIELD VERIFY UNDERGROUND UTILITIES, REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. REMOVE ALL EXCAVATED SOILS AND DISPOSE. USE ONLY CLEAN NEW FILL. EXPECT ABANDONED FOUNDATIONS, BRICK AND OLD CONSTRUCTION SPOILS TO –20 FEET BELOW GRADE AND WATER TABLE AT LESS THAN –6 FEET BELOW GRADE. DEPTH OF TRENCH AT NOT LESS THAN –12 FEET FROM GRADE TO MISS EXISTING UTILITIES. DO NOT CLOSE FIRE LANE, WORK AT NIGHT AND PROVIDE TRAFFIC PLATES OVER OPENINGS DURING THE DAY. REFER TO PATCHING DETAILS FOR ADDITIONAL REQUIREMENTS.

BUILDING AND STRUCTURE SCHEDULE

1	HOSPITAL PAVILION
1C	SWITCHGEAR BUILDING
5	UNASSIGNED BUILDING
6	ENERGY CENTER BUILDING
7	CANTEEN STORAGE ANNEX
11A	TAYLOR PAVILION
11B	OGDEN PAVILION
15	ELECTRICAL SUBSTATION
18	CHILLER PLANT
20	TRANSFORMER
21	SWITCHGEAR BUILDING
23	OXYGEN TOWER
25	CONDENSING UNIT
26	SWITCHGEAR
27	EMERGENCY GENERATOR
30	ATRIUM CLINICS PAVILION
31	FLAG POLE
32	TEMPORARY METAL BLDG.
40	BED TOWER PAVILION
42	EMERGENCY GENERATOR
43	MEMORIAL STONE – OIF
44	FLAG POLES (3)



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Revisions:	Date

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Drawing Title: ELECTRICAL SITE PLAN

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: JC

Project Number: 537-14-110

Building Number: 21

Drawing Number: 537-21-EGI-100

Dwg. 9 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231

(X) EXISTING BUILDING 21 SHEET NOTES – DEMOLITION:
A. REMOVE. REFER TO THE EXISTING 208V DP RISER DIAGRAM – DEMO ELECTRICAL RISER DIAGRAM
B. REFURBISH THE EXISTING SUBSTATION, REFER TO THE EXISTING 208V DP RISER DIAGRAM – DEMO DIAGRAM
C. REMOVE CONDUIT FEEDS AS REQUIRED. THE CONTRACTOR SHALL PATCH ALL OPENING NEW AND EXISTING ON THE BIRICK/BLOCK WALLS TO MATCH ADJACENT SURFACES
D. REMOVE PULLBOX AND FEEDS
E. REMOVE THE FEEDS FROM JB VAMC TO COMED AND PATCH THE BRICK AND BLOCK TO MATCH ADJACENT SURFACES
F. PROVIDE PROTECTION OF THE ELECTRICAL EQUIPMENT FROM CONSTRUCTION ACTIVITIES, DUST AND VIBRATIONS.
G. REPLACE THE EXISTING 4160V SWGR TO MINIMIZE POWER SHUTDOWNS AND CHANGEOVERS
H. REWORK AS REQUIRED BY CONSTRUCTION SEQUENCING THEN REMOVE THE SYSTEM CONTROL BATTERIES
I. REFURBISH THE EXISTING PIT BOX. INCLUDE ALL REQUIRED STEEL ANGLES, SUPPORTS, PLATES, ACCESSORIES.
J. KEEP THE UTILITY MASTER METERING IN SERVICE THROUGHOUT THE WORK SO THE CONTRACTOR AND VA CAN MONITOR SYSTEM LOADING ON THE JB VAMC ENERGY WEBSITE. TEMPORARY RELOCATE THE METERING AS REQUIRED TO A CONTRACTOR CONVENIENT LOCATION IN THE WORK AREA, WHATEVER IS NOT SALVAGED BY THE VA SHALL BE DISPOSED BY THE CONTRACTOR.
K. EXISTING COMED EQUIPMENT TO REMAIN. COORDINATE WITH COMED FOR ALL WORK IN THE VAULT. COMED WILL PROVIDE TERMINATION AND DETERMINATION OF CABLES ON COMED OWNED EQUIPMENT. ALL OTHER WORK IN THE VAULT SHALL BE BY THE CONTRACTOR.
L. COORDINATE WITH COMED FOR DISCONNECT AND THE CONTRACTOR SHALL REMOVE COMPLETE.

LEGEND
EXISTING
DEMOLISH
PROVIDE

ESG BLDG 6 COMPERSSOR ROOM
ESG BLDG 6 BOILER AND COGENERATION ROOM
ESG BLDG 6 CONTROL ROOM
ESG BLDG 18 CHILLER BUILDING
ComEd BLDG 15 UTILITY TRANSFORMER VAULT
SWGR ROOM BLDG 21 MAIN ELECTRICAL SERVICE
EXISTING GENERATOR SWGR RM BLDG 21 FOR THE BED TOWER
EXISTING GENERATOR RM BLDG 21 FOR THE BED TOWER
EXISTING SUBSTATION
EXIST MANHOLE
ROOF ACCESS

VAULT EXHAUST FAN AND STARTER (K)
COMED TRANSFORMER 1 (K)
COMED REVENUE CT AT CEILING (K)
CABLE TRAY AT CEILING (K)
COMED SWGR (K)
CROSS UNDER
CROSS OVER
COMED TRANSFORMER 2 (K)
COMED VAULT POWER AND LIGHTING PANELS
COMED REVENUE METERING AND ANTENNA CABINET (L)
PB (D)
BATTERIES (H)
ADVANCED UTILITY METERING CABINET (J)
208 DP (A)
pit box
existing front
EXISTING PIT BOX BELOW THE ELECTRICAL SWGR
XFMR (A)
UTILITY METER BASE (A)

EXISTING 1 BUILDING 21 PLAN
north

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Revisions:	Date

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Drawing Title: EXISTING SWGR PLAN MEDIUM VOLTAGE EQUIPMENT ROOM
Approved Project Director
Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21
Location: JESSE BROWN V.A.M.C.
Date: 7 JAN 2014 | Checked: MS | Drawn: JC
Project Number: 537-14-110
Building Number: 21
Drawing Number: 537-21-EP-100
Dwg. 10 of 16

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

BUILDING 21 SHEET NOTES – FINAL:

1. REFER TO THE 480V AND 208V NORMAL RISER DIAGRAM
2. PROVIDE LOCKING PPE CABINET AND 9 SETS OF PPE. RATING TO EXCEED THE LARGEST CALCULATED FAULT LEVEL. COORDINATE FINAL SIZES WITH JB VAMC
3. IN ADDITION TO THE REPLACEMENT SWITCHGEAR THE CONTRACTOR SHALL PROVIDE ONE MAIN OCP/BREAKER AND ONE BRANCH OCP/BREAKER AS SPARE. PROVIDE CUSTOM BUILT SWGR CABINET TO SECURELY HOUSE THESE SPARES.
4. PROVIDE CABINET WITH ONE COPY OF ALL AS BUILTS, INSTRUCTIONS AND SPARE PARTS
5. FIRE/SECUIRTY/TEL CABINETS. REFER TO THE FIRE/SECUIRTY/TELPHONE/DATA RISER DIAGRAMS.
6. ARC FLASH PLENUM ABOVE THE SWITCHGEAR, REFER TO BUILDING 21 SECTION AND SPECIFICATION FOR ADDITIONAL INFORMATION.
7. THE CONTRACTOR SHALL PROVIDE A CUSTOM BATTERY RACK NEEDED TO OBTAIN THE WORKING CLEARANCE TO SWGR.
8. SERVICE LATERAL WITH SUPPORT FOR THE CONCRETE ENCASEMENT AND LOCKING PB COVERS, ETC AS REQUIRED BY COMED. THE SERVICE LATERAL LOCATION SHOWN IN PLAN RE–USES THE EXISTING THROUGH THE WALL OPENINGS AND ALIGNMENT. THE EXACT FINAL LOCATION IS A FUNCTION OF THE MANUFACTURER OF THE SWITCHGEAR AND ACCEPTANCE BY COMED. THE CONTRACTOR SHALL INCLUDE OFFSETTING THE 'A' SIDE SERVICE LATERAL PER THE SATISFACTION OF COMED INCLUDING REPOSITIONING AND EXTENDING THE WIREWAY INSIDE THE COMED VAULT. THE CONTRACTOR SHALL SUBMIT A PLAN TO THE VA AND COMED FOR APPROVAL.
9. REFER TO THE GROUNDING DETAILS FOR FENCE GROUNDING

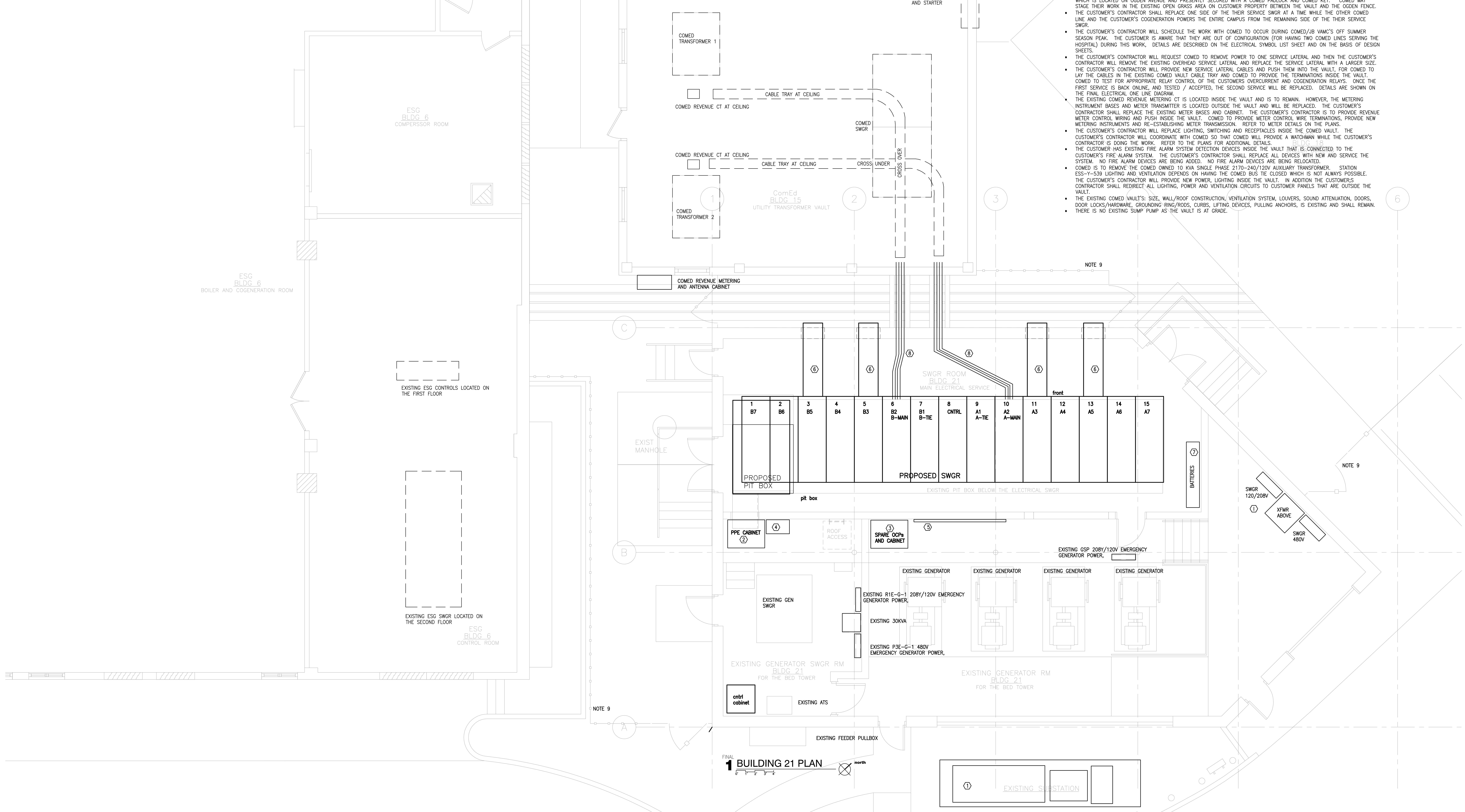
COMED VAULT CONSTRUCTION STANDARDS

- SWITCHES AND RECEPTACLES ARE TO BE WP
- MOUNT SWITCHES AT 4'–6"AFF
- LIGHTING NOT LESS THAN 10' AFF
- THE LIGHTING, RECEPTACLE, AND FIRE ALARM LAYOUT IS TO BE COORDINATED IN THE FIELD WITH EXISTING OBSTRUCTIONS TO THE SATISFACTION OF THE COMED VAULT SUPERVISOR.

LEGEND
EXISTING
DEMOLISH
PROVIDE

GENERAL NOTES AND SCOPE OF WORK FOR COMED UTILITY;

- THE EXISTING CUSTOMER IS DEPARTMENT OF VETERANS AFFAIRS, JESSE BROWN VAMC. THE CUSTOMER'S CONTRACTOR IS BIDDING AND INSTALLING THE WORK SHOWN ON THESE PLANS AND SPECIFICATIONS (INCLUDING THE WORK INDICATED AS THE "CUSTOMER'S CONTRACTOR" IN THESE NOTES), ONLY SPECIFIC TASKS ARE TO BE PERFORMED BY COMED FOR THIS WORK, HOWEVER SIGNIFICANT FUTURE SEPARATE PROJECTS ARE LISTED IN THESE PLANS FOR COMED'S PLANNING.
- THE CUSTOMER IS REPLACING THEIR ELECTRICAL SERVICE EQUIPMENT WITH NEW FOR RELIABLE SERVICE LIFE AND INCREASING THE AMPACITY FOR (SEPARATE FUTURE CUSTOMER PROJECTS) LOAD GROWTH. CLOSED TRANSITION TRANSFER BETWEEN THE CUSTOMER MAINS, TIE BREAKERS, BRANCH BREAKERS AND THE CUSTOMER COGENERATION (NATURAL GAS TURBINE) WILL REMAIN.
- THE REPLACEMENT SERVICE EQUIPMENT WILL ALLOW FOR A FINAL CONFIGURATION AS FOLLOWS: A) COGENERATION CONNECTIONS TO BOTH COMED LINES WHERE PRESENTLY COGENERATION IS ATTACHED TO ONLY ONE COMED LINE, B) COGENERATION CAPACITY INCREASE (FUTURE SEPARATE PROJECT) FROM 3.2MW TO 5.2MW, AND C) REPLACE PROTECTIVE RELAYS FOR BOTH THE CUSTOMER SWITCHGEAR AND COGENERATION.
- THE CUSTOMER'S COGENERATION SYSTEM IS OF SUFFICIENT CAPACITY WHERE THE CUSTOMER'S COGENERATION SERVICE PROVIDER WILL BE CONFIGURED TO EXPORT POWER ONTO THE COMED'S UTILITY GRID DURING THE NON–PEAK OFF–SUMMER TIMES, IF AND WHEN CONTRACTS/AGREEMENTS ARE UPDATED TO ALLOW.
- COMED WILL HAVE ACCESS TO THE SITE AND THE VAULT THROUGH THE EXISTING OPENING IN THE CUSTOMER'S PERIMETER FENCE WHICH IS LOCATED ON OGDEN AVENUE AND PRESENTLY SECURED WITH A COMED PADLOCK AND COMED KEY. COMED MAY STAGE THEIR WORK IN THE EXISTING OPEN GRASS AREA ON CUSTOMER PROPERTY BETWEEN THE VAULT AND THE OGDEN FENCE.
- THE CUSTOMER'S CONTRACTOR SHALL REPLACE ONE SIDE OF THE THEIR SERVICE SWGR AT A TIME WHILE THE OTHER COMED LINE AND THE CUSTOMER'S COGENERATION POWERS THE ENTIRE CAMPUS FROM THE REMAINING SIDE OF THE THEIR SERVICE SWGR.
- THE CUSTOMER'S CONTRACTOR WILL SCHEDULE THE WORK WITH COMED TO OCCUR DURING COMED/JB VAMC'S OFF SUMMER SEASON PEAK. THE CUSTOMER IS AWARE THAT THEY ARE OUT OF CONFIGURATION (FOR HAVING TWO COMED LINES SERVING THE HOSPITAL) DURING THIS WORK, DETAILS ARE DESCRIBED ON THE ELECTRICAL SYMBOL LIST SHEET AND ON THE BASIS OF DESIGN SHEETS.
- THE CUSTOMER'S CONTRACTOR WILL REQUEST COMED TO REMOVE POWER TO ONE SERVICE LATERAL AND THEN THE CUSTOMER'S CONTRACTOR WILL REMOVE THE EXISTING OVERHEAD SERVICE LATERAL AND REPLACE THE SERVICE LATERAL WITH A LARGER SIZE.
- THE CUSTOMER'S CONTRACTOR WILL PROVIDE NEW SERVICE LATERAL CABLES AND PUSH THEM INTO THE VAULT, FOR COMED TO LAY THE CABLES IN THE EXISTING COMED VAULT CABLE TRAY AND COMED TO PROVIDE THE TERMINATIONS INSIDE THE VAULT. COMED TO TEST FOR APPROPRIATE RELAY CONTROL OF THE CUSTOMERS OVERCURRENT AND COGENERATION RELAYS. ONCE THE FIRST SERVICE IS BACK ONLINE, AND TESTED / ACCEPTED, THE SECOND SERVICE WILL BE REPLACED. DETAILS ARE SHOWN ON THE FINAL ELECTRICAL ONE LINE DIAGRAM.
- THE EXISTING COMED REVENUE METERING CT IS LOCATED INSIDE THE VAULT AND IS TO REMAIN. HOWEVER, THE METERING INSTRUMENT BASES AND METER TRANSMITTER IS LOCATED OUTSIDE THE VAULT AND WILL BE REPLACED. THE CUSTOMER'S CONTRACTOR SHALL REPLACE THE EXISTING METER BASES AND CABINET. THE CUSTOMER'S CONTRACTOR IS TO PROVIDE REVENUE METER CONTROL WIRING AND PUSH INSIDE THE VAULT. COMED TO PROVIDE METER CONTROL WIRE TERMINATIONS, PROVIDE NEW METERING INSTRUMENTS AND RE–ESTABLISHING METER TRANSMISSION. REFER TO METER DETAILS ON THE PLANS.
- THE CUSTOMER'S CONTRACTOR WILL REPLACE LIGHTING, SWITCHING AND RECEPTACLES INSIDE THE COMED VAULT. THE CUSTOMER'S CONTRACTOR WILL COORDINATE WITH COMED SO THAT COMED WILL PROVIDE A WATCHMAN WHILE THE CUSTOMER'S CONTRACTOR IS DOING THE WORK. REFER TO THE PLANS FOR ADDITIONAL DETAILS.
- THE CUSTOMER HAS EXISTING FIRE ALARM SYSTEM DETECTION DEVICES INSIDE THE VAULT THAT IS CONNECTED TO THE CUSTOMER'S FIRE ALARM SYSTEM. THE CUSTOMER'S CONTRACTOR SHALL REPLACE ALL DEVICES WITH NEW AND SERVICE THE SYSTEM. NO FIRE ALARM DEVICES ARE BEING ADDED. NO FIRE ALARM DEVICES ARE BEING RELOCATED.
- COMED IS TO REMOVE THE COMED OWNED 10 KVA SINGLE PHASE 2170–240/120V AUXILIARY TRANSFORMER. STATION ESS–Y–539 LIGHTING AND VENTILATION DEPENDS ON HAVING THE COMED BUS TIE CLOSED WHICH IS NOT ALWAYS POSSIBLE. THE CUSTOMER'S CONTRACTOR WILL PROVIDE NEW POWER, LIGHTING INSIDE THE VAULT. IN ADDITION THE CUSTOMER;S CONTRACTOR SHALL REDIRECT ALL LIGHTING, POWER AND VENTILATION CIRCUITS TO CUSTOMER PANELS THAT ARE OUTSIDE THE VAULT.
- THE EXISTING COMED VAULT'S: SIZE, WALL/ROOF CONSTRUCTION, VENTILATION SYSTEM, LOUVERS, SOUND ATTENUATION, DOORS, DOOR LOCKS/HARDWARE, GROUNDING RING/RODS, CURBS, LIFTING DEVICES, PULLING ANCHORS, IS EXISTING AND SHALL REMAIN.
- THERE IS NO EXISTING SUMP PUMP AS THE VAULT IS AT GRADE.



FINAL
1 BUILDING 21 PLAN
north

Revisions:	Date
ISSUED FOR SOLICITATION	5 MAY 2014

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Drawing Title: SWGR PLAN MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: JC

Project Number: 537-14-110

Building Number: 21

Drawing Number: 537-21-EP-101

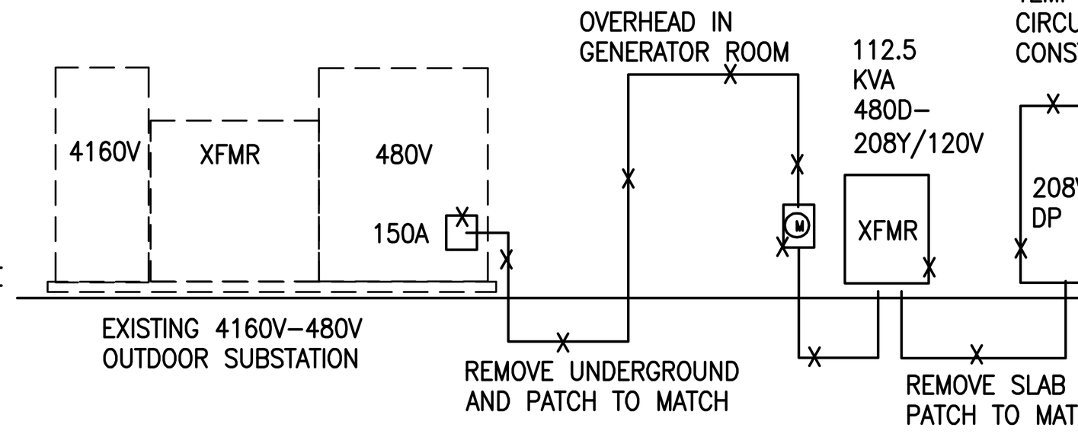
Dwg. 11 of 16

Office of Construction and Facilities Management

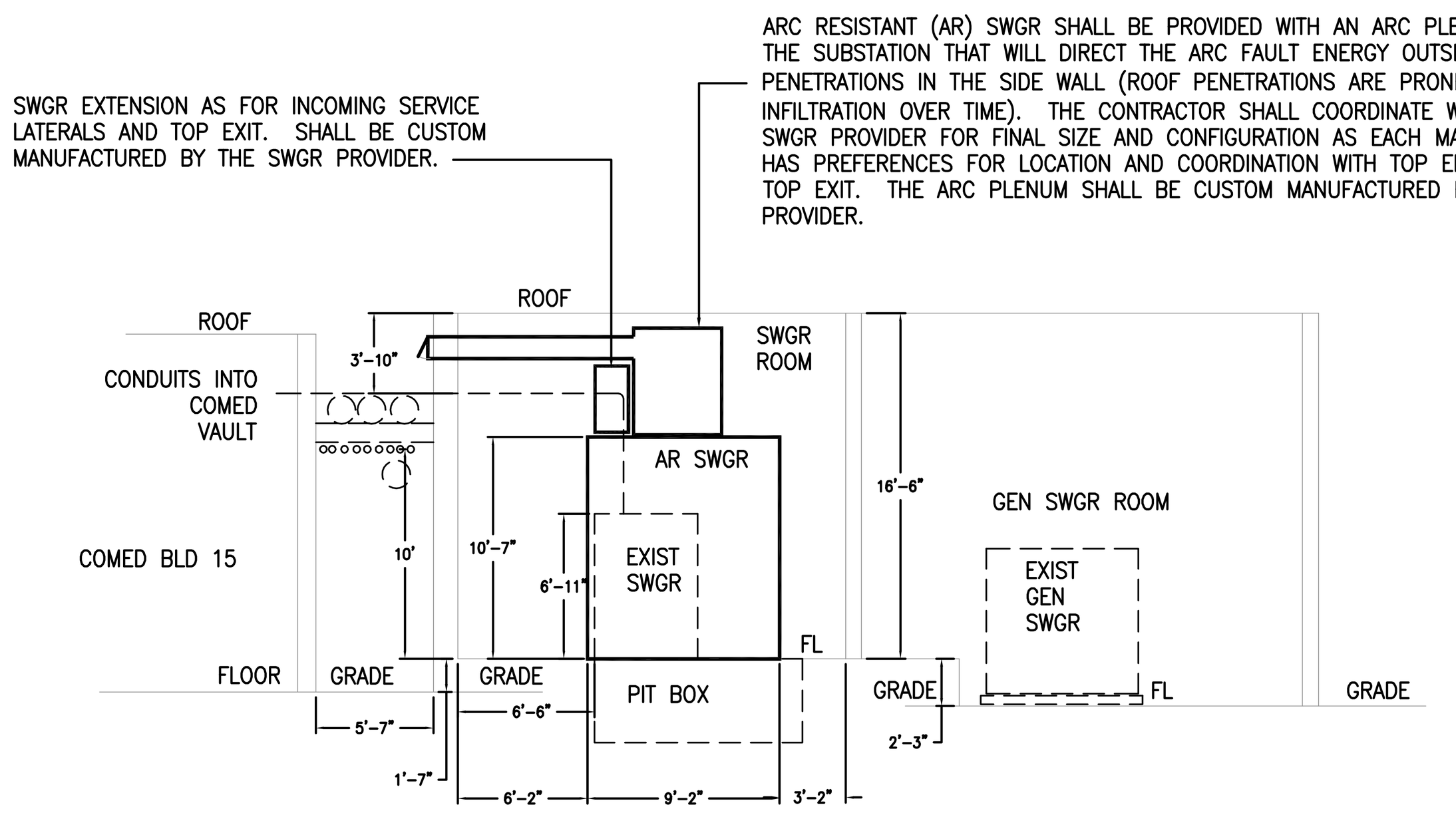
Department of Veterans Affairs

VA FORM 08–6231

EXISTING 4160V–480V OUTDOOR SUBSTATION WORK
- CLEAN EXTERIOR, REMOVE RUST, SEAL ALL OPENINGS, PRIMER AND REPAINT TO MANUFACTURER STANDARD
- CLEAN INTERIOR, TORQUE, THERMAL SCAN, REMOVE RUST, PRIMER AND REPAINT INTERIOR.
- REPLACE THE OIL IN THE TRANSFORMER
- PROVIDE ALL MISSING DEAD FRONT HARDWARE, PROVIDE ALL NEW ENGRAVED NAMEPLATES
- CLEAN AND REFURBISH ALL DOOR HARDWARE AND DOOR LOCKING HARDWARE
- PROVIDE STEEL OSHA WARNING LABELS AND CUSTOM ENGRAVED NAMEPLATE ON THE EXTERIOR.
- LEVEL THE SUBSTATION AND THE PAD WITHOUT DISTURBING UNDERGROUND CONDUITS
- COORDINATE SHUTDOWN WITH VA FOR SUNDAYS

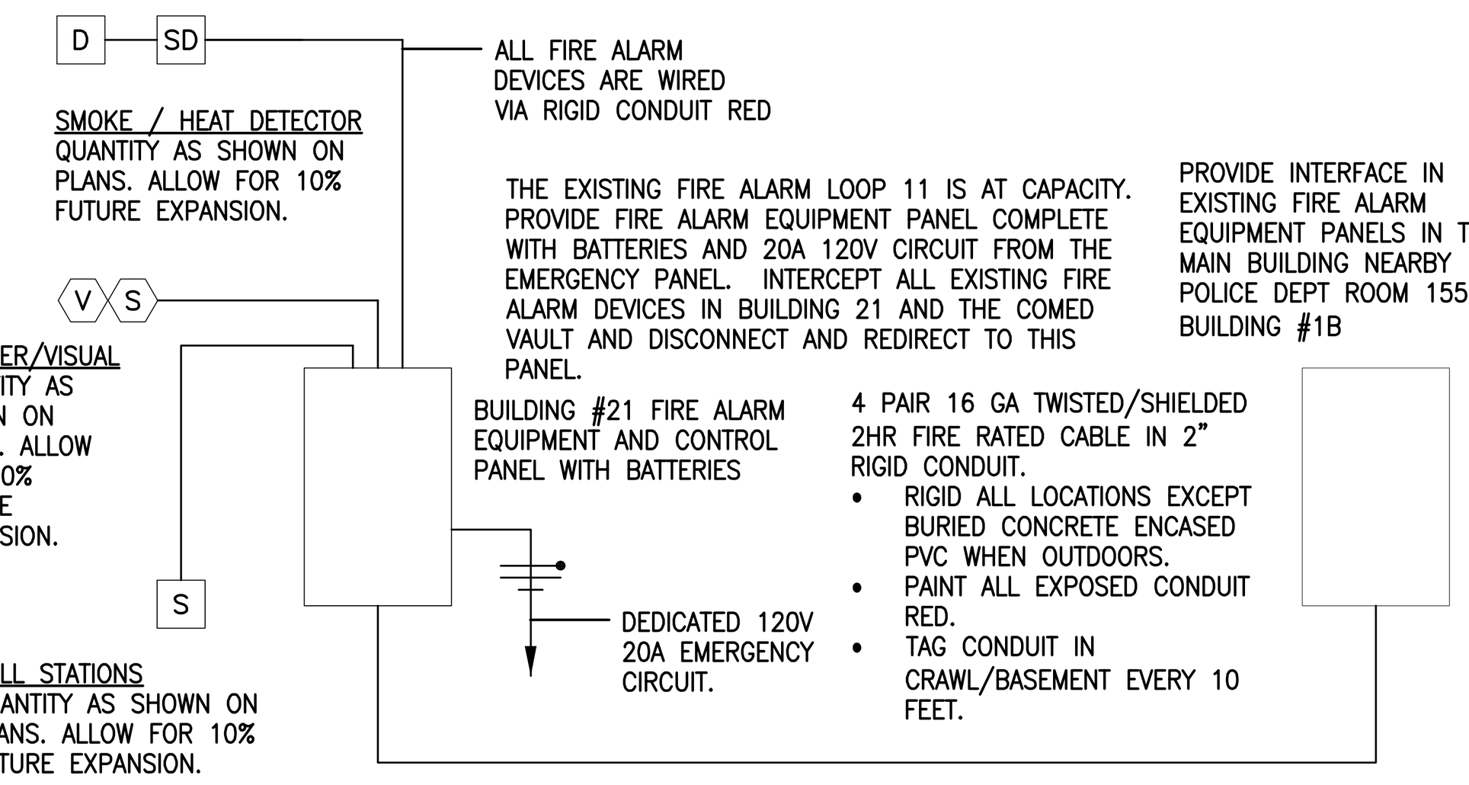


3D EXISTING 208V DP RISER DIAGRAM - DEMO
SCALE: NONE

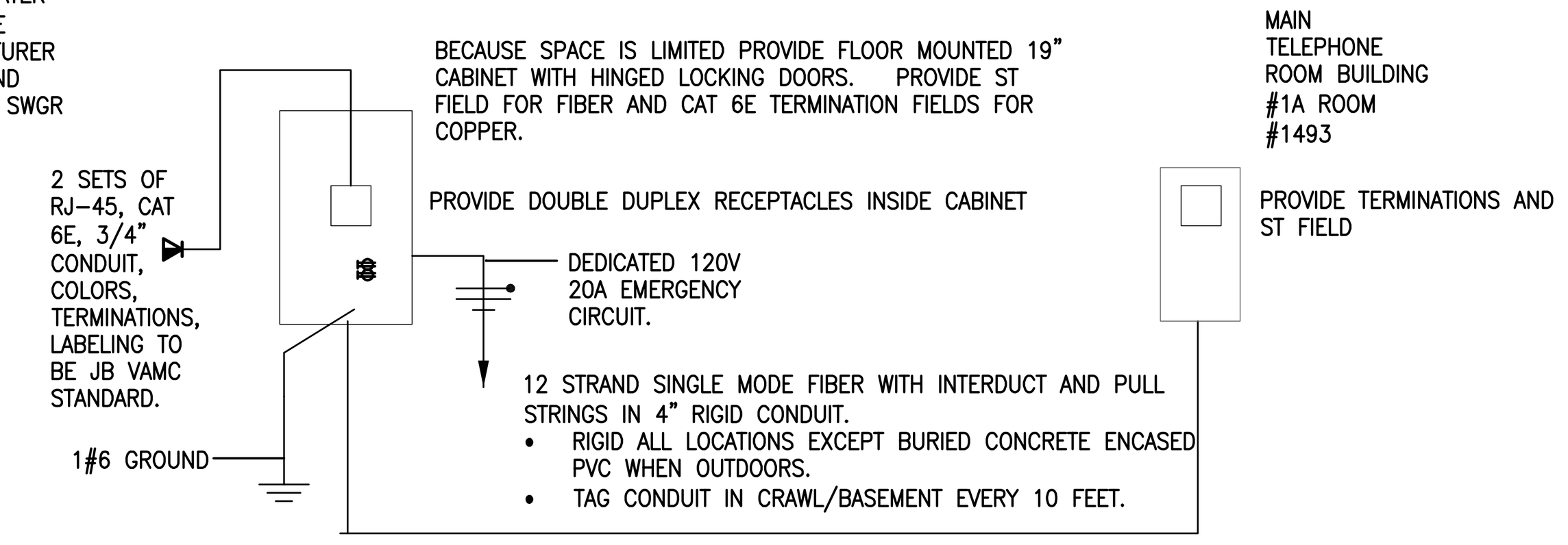


21 SECTION LOOKING NORTH-EAST BUILDING 21
SCALE: NONE

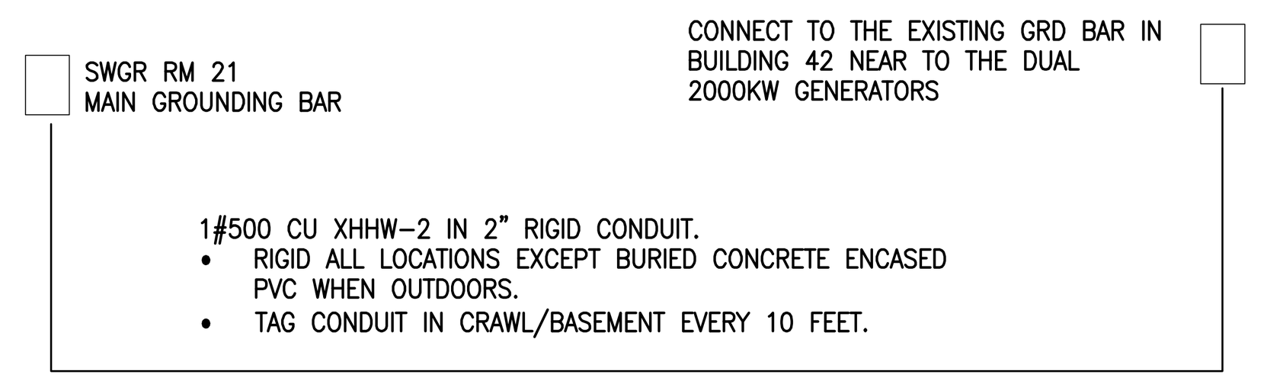
SECTION GENERAL NOTES
a. DIMENSIONS SHOWN ARE APPROXIMATE AND WILL CHANGE DEPENDING ON THE SELECTED SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL SUBMIT DETAILED AND DIMENSIONED FLOOR PLAN AND ELEVATION FOR REVIEW AND APPROVAL.
b. THE EXISTING DEPTH OF THE PIT BOX WILL BE CONFIRMED BY THE CONTRACTOR AND IS ESTIMATED AT 5 FEET DEEP.
c. PROVIDE CUSTOM COVERS, AND SUPPORTS INSIDE THE PIT BOX TO SUPPORT THE SWGR. PROVIDE PIT BOX SUBMITTAL THAT IS COORDINATED WITH THE SWITCHGEAR MANUFACTURER. INCLUDE LOAD CALCULATIONS FOR THE WEIGHT AND SHIPPING SPLITS OF THE SWITCHGEAR.



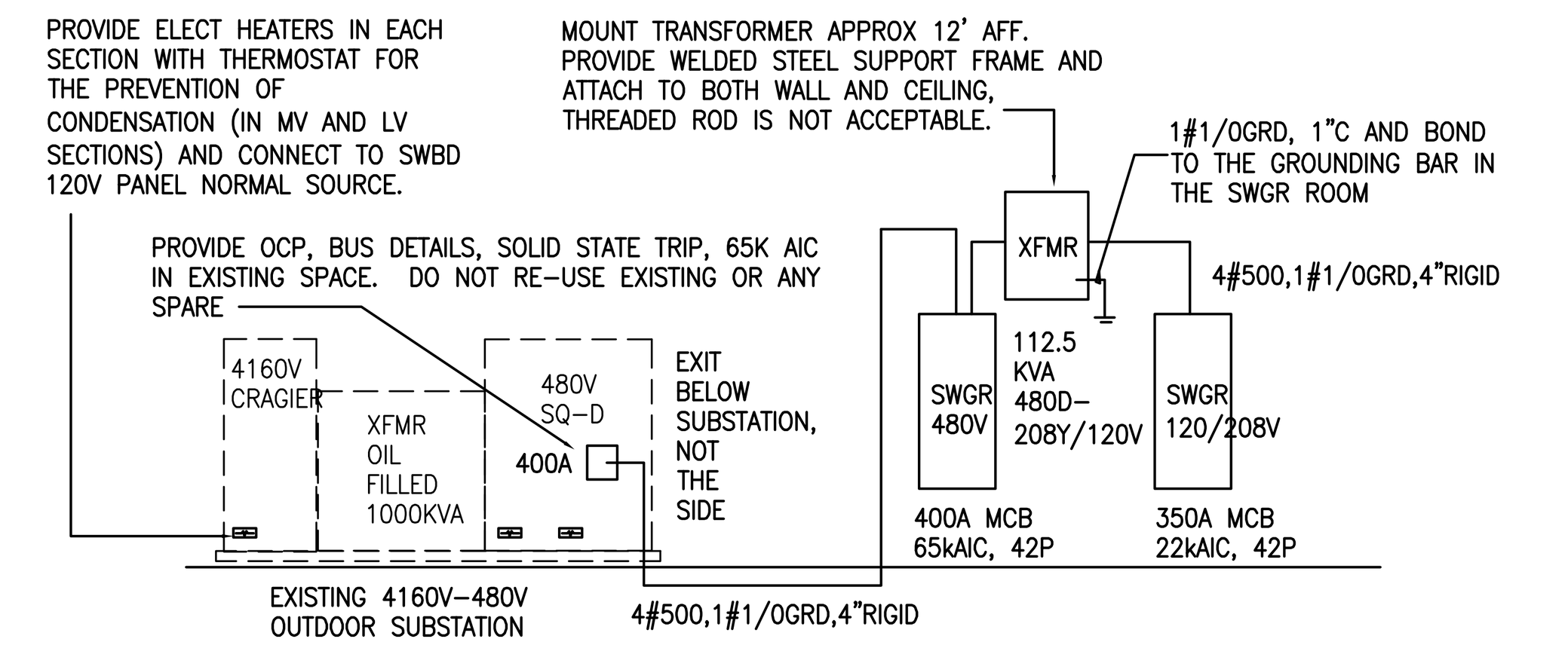
4 FIRE ALARM RISER DIAGRAM
SCALE: NONE



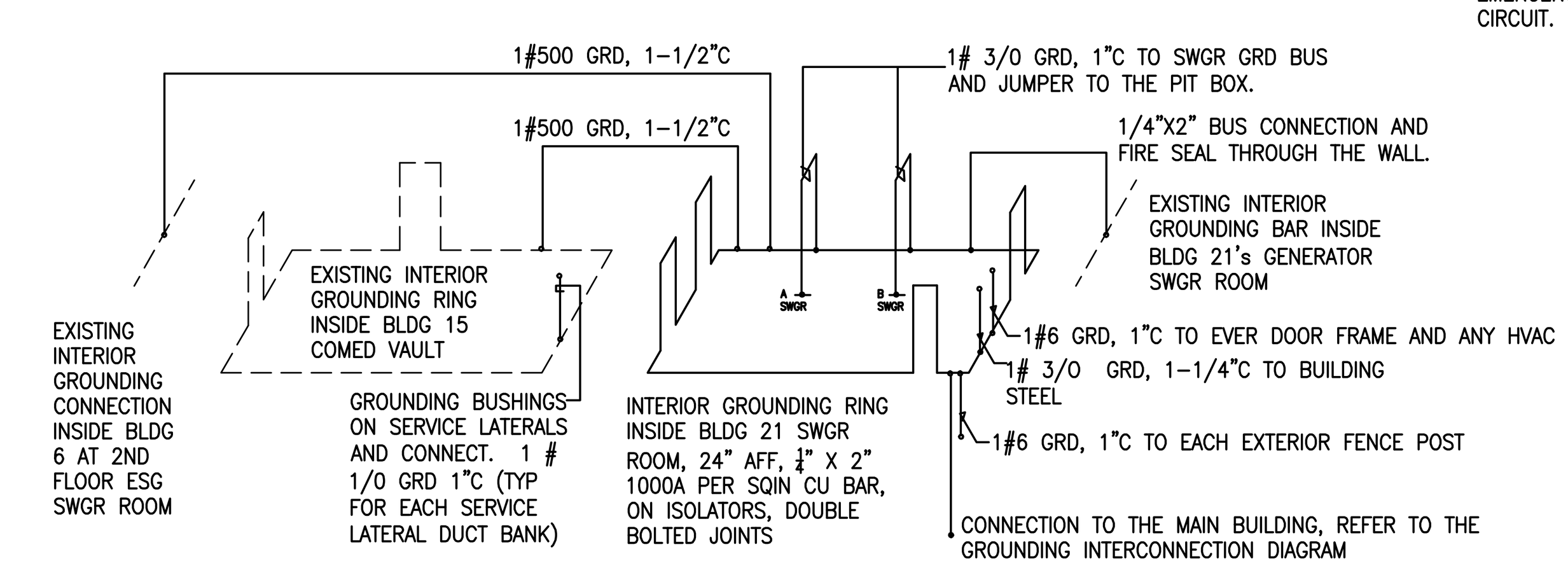
5 VOICE /DATA RISER DIAGRAM
SCALE: NONE



6 GROUNDING INTERCONNECT RISER
SCALE: NONE

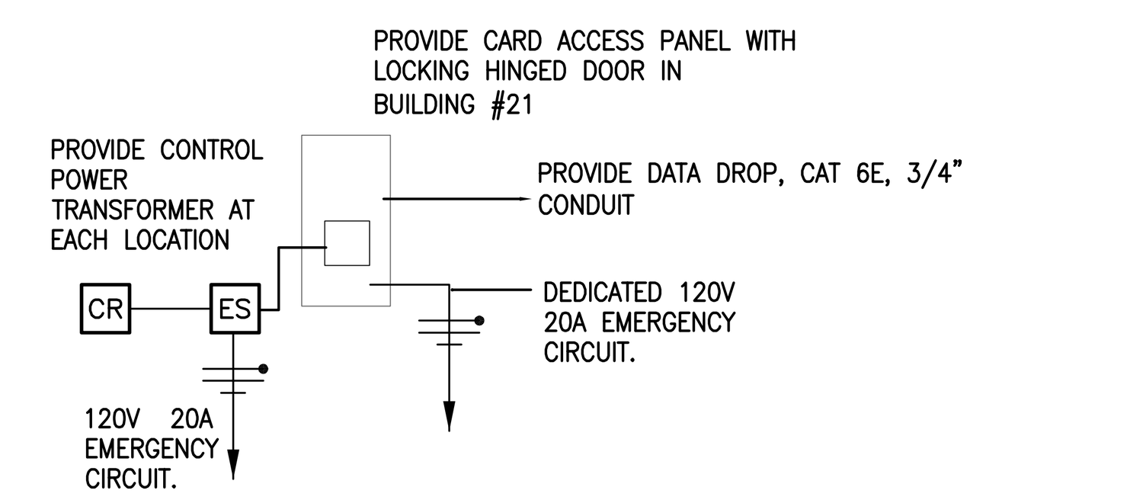


3F EXISTING 208V DP RISER DIAGRAM - FINAL
SCALE: NONE

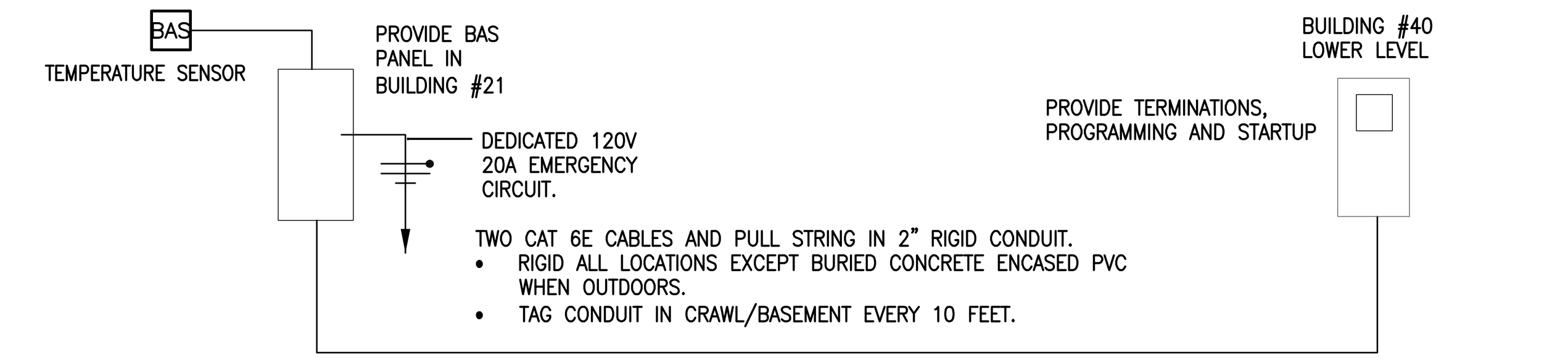


10 GRNDNG - BLDGS: 6 ESG, 15 COMED AND 21 SWGR
SCALE: NONE

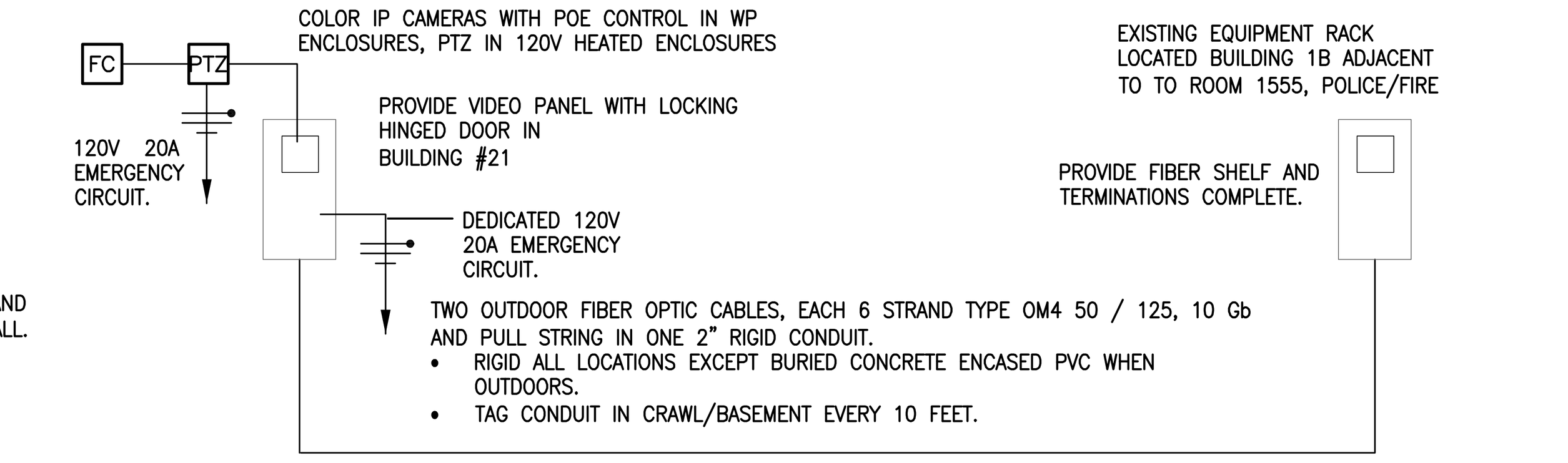
ALL CONNECTIONS EXOTHERMIC WELDS



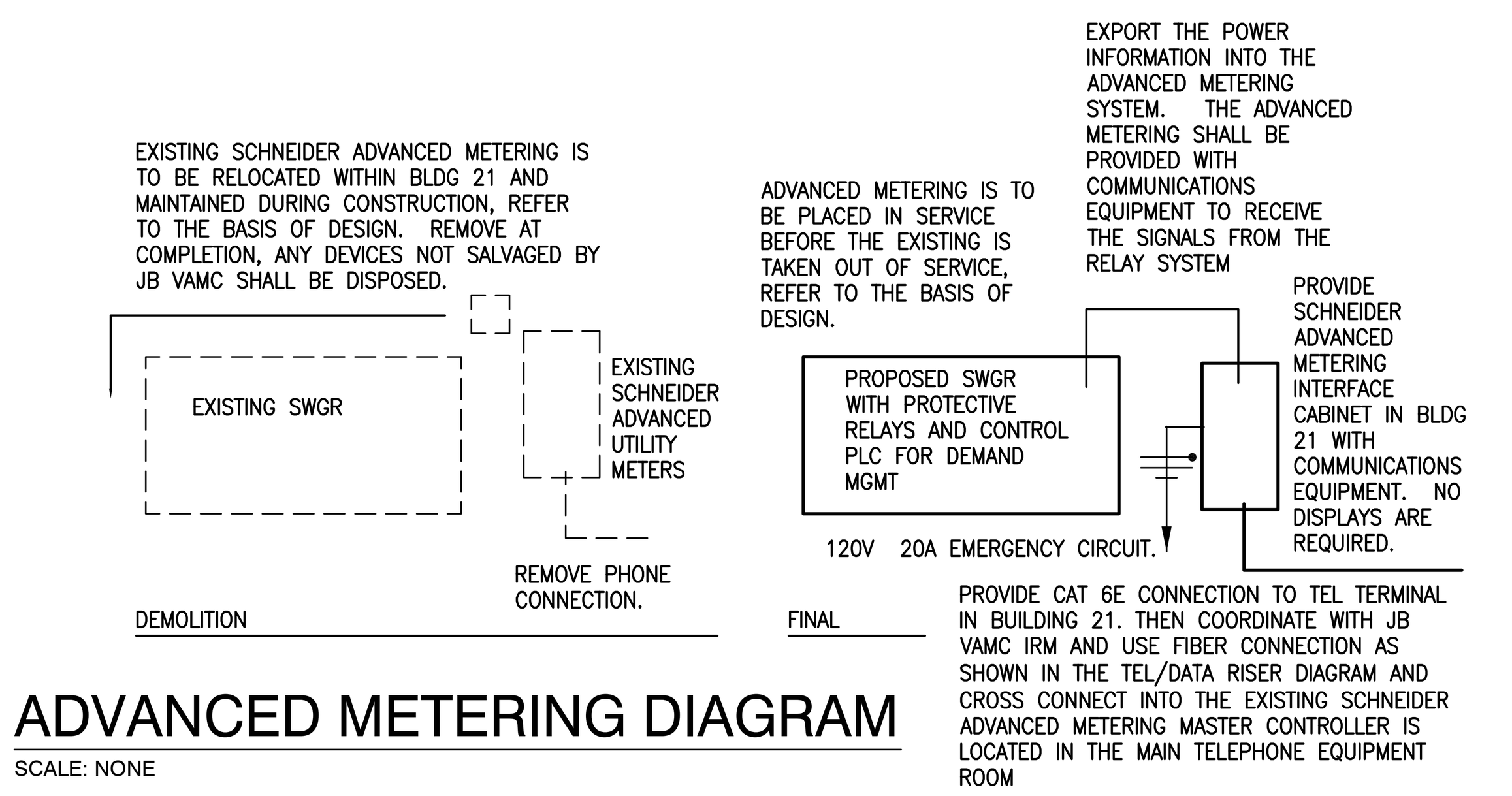
11 CARD ACCESS RISER DIAGRAM
SCALE: NONE



7 BUILDING AUTOMATION (BAS) RISER DIAGRAM
SCALE: NONE

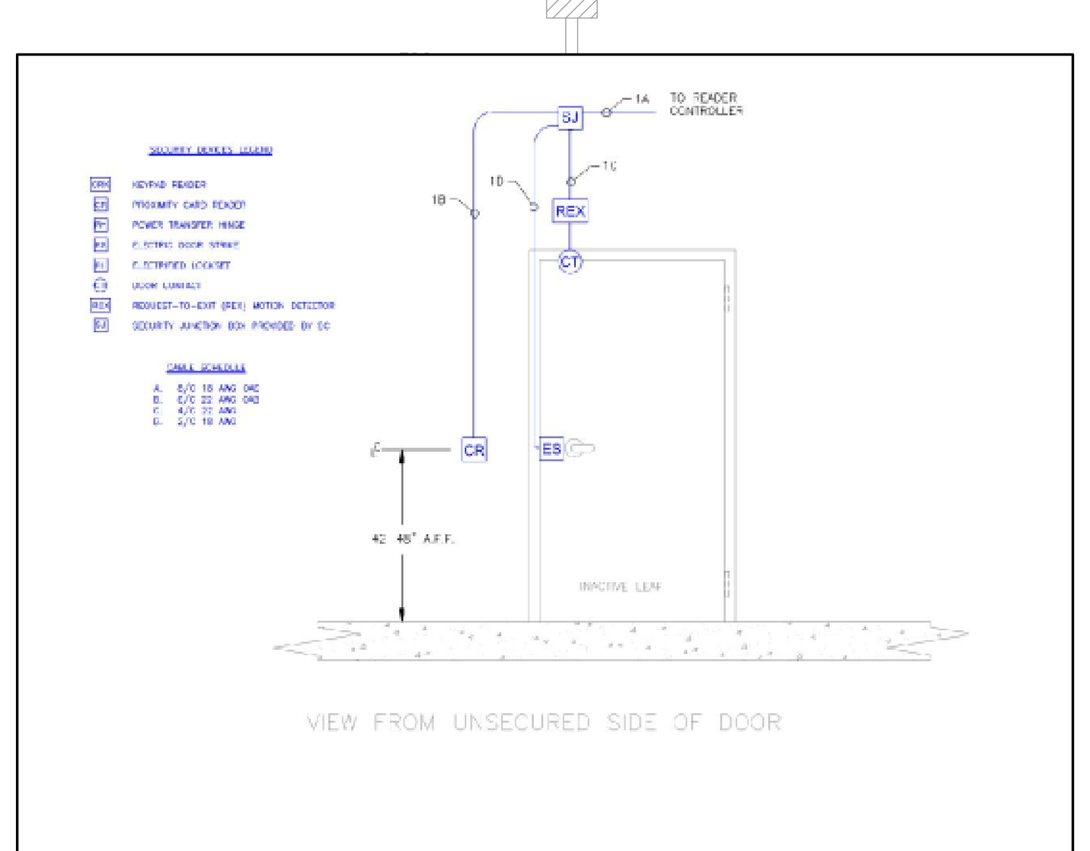


8 VIDEO SURVELIENCE RISER DIAGRAM
SCALE: NONE

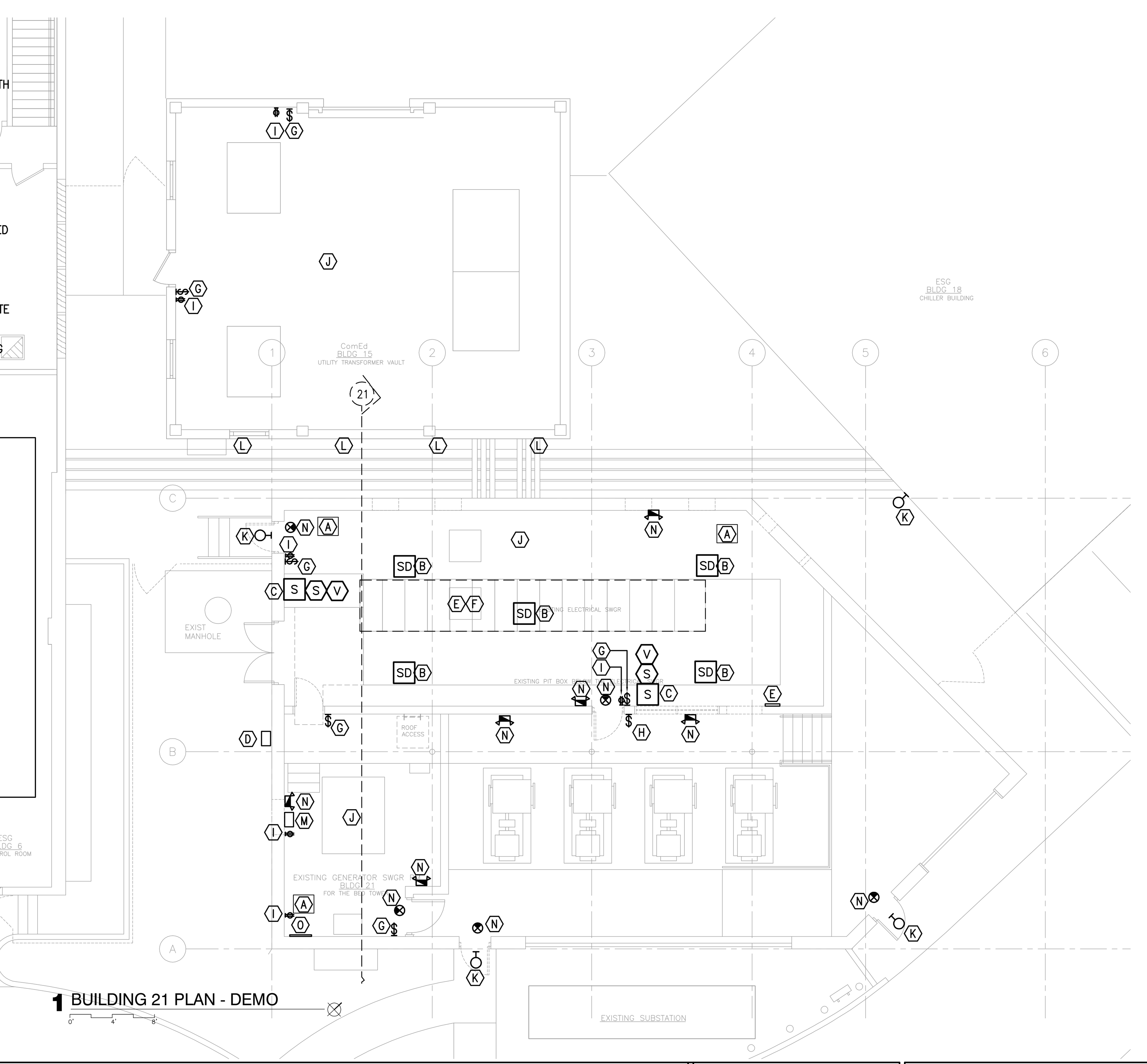


9 ADVANCED METERING DIAGRAM
SCALE: NONE

⟨X⟩ BUILDING 21 DEMOLITION PLAN – NOTES
A. REMOVE EXISTING ELECTRIC UNIT HEATERS, REMOTE THERMOSTATS AND POWER/CONTROL CIRCUITS COMPLETE. ALLOW VA ELECTRIC SHOP TO SALVAGE WHAT IS DESIRED AND DISPOSE OF REMAINS.
B. EXISTING SMOKE DETECTOR IS TO BE RELOCATED WHERE IN CONFLICT WITH THE PROPOSED OVERHEAD CONDUITS AND RE–USED.
C. EXISTING FIRE ALARM DEVICES TO BE RELOCATED AS REQUIRED BY THE DOOR WORK
D. RELOCATE THE EXISTING BURIED FIRE ALARM FEED LOOP 11 AS IS SHALLOW AND IN CONFLICT WITH THE PROPOSED DOOR CONCRETE PAD. REFER TO THE FIRE ALARM RISER DIAGRAM FOR ADDITIONAL INFORMATION
E. REMOVE EXISTING EXHAUST FAN CONTROLS COMPLETE.
F. REMOVE THE EXISTING LIGHTNING SPIRE ON TOP OF THE ROOF MOUNTED EXHAUST FAN.
G. REMOVE THE EXISTING LIGHT SWITCHING COMPLETE
H. LIGHT SWITCH TO BE RELOCATED AND EXISTING LIGHTING CIRCUIT RE–USED
I. REMOVE ALL RECEPTACLES AND FEEDS COMPLETE.
J. REMOVE ALL LIGHTING AND FEEDS COMPLETE
K. REMOVE WALL PACK COMPLETE
L. REMOVE ROOF MOUNTED FLOOD LIGHTING COMPLETE. PATCH ROOF TO MATCH.
M. RELOCATE THE EXISTING HVAC CONTROLS AND BRANCH CIRCUITS COMPLETE AWAY FROM THE PROPOSED NEW DOOR
N. REMOVE EXIT SIGN AND BATTERY PACK AND FEEDS COMPLETE.
O. RELOCATE THE EXISTING VEEDER ROOT DIESEL STORAGE TANK MONITORING CONTROL CIRCUITS AWAY FROM THE PROPOSED SWITCHGEAR REMOTE STATION

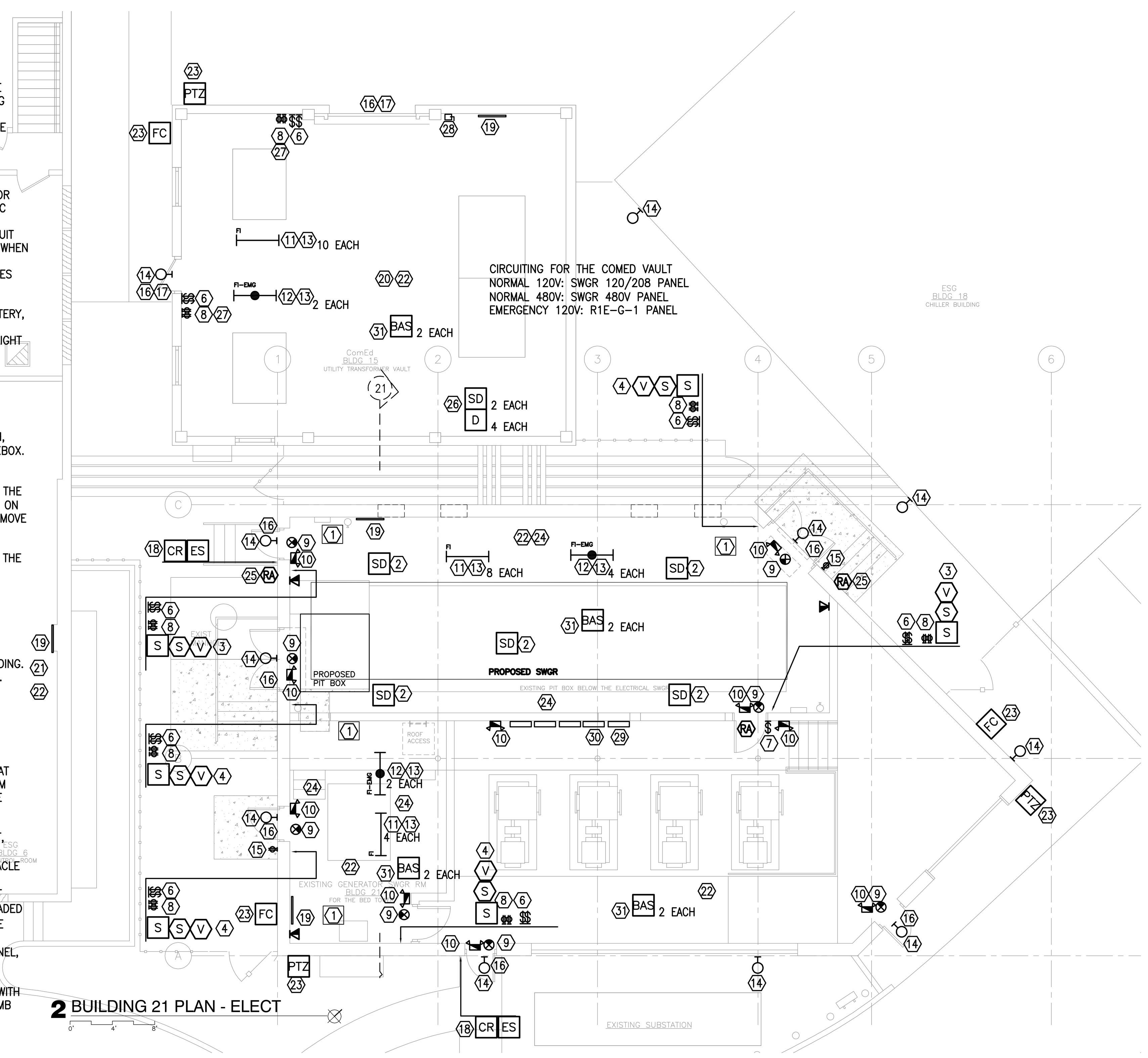


12 CARD READER WIRING DIAGRAM
SCALE: NONE



1 BUILDING 21 PLAN - DEMO

⟨X⟩ BUILDING 21 PLAN – NOTES
1. 5KW 208V–3P UNIT HEATER COMPLETE WITH INTERNAL FAN / LINE VOLTAGE DISCONNECT / AND UNIT MOUNTED THERMOSTAT. STAINLESS STEEL. PROVIDE MOUNTING BRACKET AND LOCATE APPROXIMATE 12' AFF. 3#10,1#10GRD, 1"C TO 20A–3P 208V CB
2. RE–SPACE SMOKE DETECTORS TO MEET CODE AND TO AVOID CONFLICTS WITH THE NEW WORK. REPLACE EXISTING DETECTORS WITH NEW AND UPDATE THE EXISTING FIRE ALARM RECORD DOCUMENTS.
3. RELOCATE EXISTING FIRE ALARM DEVICES. REPLACE IF NOT SERVICEABLE. UPDATE THE EXISTING RECORD DOCUMENTS.
4. PROVIDE NEW FIRE ALARM DEVICES TO MATCH EXISTING. EXTEND EXISTING INITIATION/INDICATION CIRCUITS AND PROVIDE AMPLIFICATION WHERE REQUIRED.
5. NOTE NOT USED.
6. RED SWITCH FOR LIGHTING CONNECTED TO EMERGENCY CIRCUIT, BLACK SWITCH FOR LIGHTING CONNECTED TO NORMAL CIRCUIT. THIS IS MEDIUM VOLTAGE AND THE IEC REQUIREMENTS FOR LIGHTING OCCUPANCY SENSORS DO NOT APPLY.
7. PROVIDE SWITCH TO MATCH EXISTING AND RECONNECT TO EXISTING LIGHTING CIRCUIT
8. RED RECEPTACLE WHEN CONNECTED TO EMERGENCY CIRCUIT, BLACK RECEPTACLE WHEN CONNECTED TO NORMAL CIRCUIT.
9. LED EXIT SIGN WITH RED LETTERS ON WHITE, THERMOPLASTIC HOUSING, 90 MINUTES OF BATTERY, PUSH TO TEST BUTTON, CONNECTED TO THE EMERGENCY LIGHTING CIRCUIT
10. BATTERY EMERGENCY LIGHT, LED, THERMOPLASTIC HOUSING, 90 MINUTES OF BATTERY, PUSH TO TEST BUTTON, CONNECTED TO THE EMERGENCY LIGHTING CIRCUIT
11. LIGHTING FIXTURE TYPE F1; PENDANT MOUNTED INDUSTRIAL STRIP WITH 20% UPLIGHT AND WIRE GUARD OVER THE LAMPS. LED LAMPS (NOT LED LAMP RETROFIT KIT), BOTTOM OF FIXTURE APPROX 12' AFF.
12. LIGHTING FIXTURE TYPE F1–EMG: SAME AS F1 EXCEPT CONNECTED TO THE EMERGENCY CIRCUIT. NO BATTERY BALLAST.
13. EQUALLY SPACE THE LIGHTING FIXTURES, SUBMIT LAYOUT FOR REVIEW PRIOR TO INSTALLATION.
14. EXTERIOR WALL PACK, DARK SKY, LED, PHOTOCELL ON/OFF, DARK BRONZE FINISH, CONNECTED TO THE LIGHTING CIRCUIT, REMOVE BRICK FOR FLUSH MOUNTED BACKBOX.
15. WP GFI RECEPTACLE CONNECTED TO THE NORMAL CIRCUIT. MAKE FLUSH IN THE EXISTING BRICK
16. PROVIDE 12 INCH BLACK STENCILED BUILDING NUMBER / NAME ON EXTERIOR OF THE DOOR. IN ADDITION, PROVIDE PAINTED STEEL OSHA HIGH VOLTAGE WARNING SIGN ON EXTERIOR OF DOOR. SUBMIT DATA SHEET FOR REVIEW. ON EXISTING DOORS, REMOVE EXISTING SIGNAGE, REMOVE RUST, PRIMER AND RE–PAINT DOORS AND FRAMES TO MATCH.
17. PROVIDE ENGRAVED NAMEPLATE WITH EMERGENCY CALL NUMBER ON EXTERIOR OF THE COMED VAULT DOOR. COORDINATE WITH COMED FOR CONTENT.
18. PROVIDE CARD READER ENTRY FOR THIS DOOR AND CONNECT TO THE EXISTING CAMPUS SECURITY DOOR ACCESS CONTROL SYSTEM.
19. ONE LINE DIAGRAM WITH SEQUENCE OF OPERATION UNDER GLASS, REFER TO THE ELECTRICAL SITE PLAN FOR REQUIREMENTS
20. THE CONTRACTOR SHALL COORDINATE WITH COMED FOR ALL WORK IN THE COMED VAULT.
21. THE CONTRACTOR SHALL COORDINATE WITH ESG FOR ALL WORK IN THE ESG BUILDING.
22. REFER TO THE SPECIFICATIONS AND GENERAL NOTES FOR CONDUIT REQUIREMENTS. DO NOT RUN OVERHEAD IN GENERATOR ROOM OR EXPOSED ON OUTSIDE OF THE BUILDING
23. MOUNTED AT ROOF LINE, WITH 120V FOR HEATER/CNTRL
24. PROVIDE 4 FOOT WIDE RUBBER WALKING MAT EQUAL LENGTH TO THE GEAR
25. PROVIDE FLUSH FIRE ALARM REMOTE ANNUNCIATOR IN A CUSTOM NEMA WP ENCLOSURE
26. THERE ARE EXISTING JB VAMC FIRE ALARM DEVICES INSIDE THE COMED VAULT THAT ARE TO REMAIN. REPLACE THE DEVICES WITH NEW AND PROVIDE NEW FIRE ALARM FEED TO THE NAC PANEL. RELOCATE TO REQUIRED TO THE SATISFACTION OF THE COMED VAULT SUPERVISOR. UPDATE THE EXISTING FIRE ALARM RECORD DOCUMENTATION.
27. THE EMERGENCY RECEPTACLE IN THE COMED VAULT SHALL BE 15 AMP, 125 VOLT, NEMA L5–15R/5–15R, 2P, 3W, DUPLEX LOCKING RECEPTACLE,INDUSTRIAL GRADE, GROUNDING, LOCK/STRAIGHT COMBO, NOT GFI PROTECTED. THE NORMAL RECEPTACLE NEMA 5–20R DUPLEX AND SHALL BE GFCI PROTECTED.
28. 30SW/30FU 3P HEAVY DUTY NEMA 12 SS FUSED DISC SWITCH FOR COMED VAULT EQUIPMENT AND TESTING. DO NOT SHARE HOMERUN, 3#10, 1#10 GRD, 1" THREADED RIGID TO EXISTING R1E–G–1 208Y/120V EMERGENCY GENERATOR POWER, PROVIDE 30A–3P CB.
29. FIRE ALARM PANEL, SECURITY PANEL, TEL/DATA PANEL, CCTV PANEL AND BAS PANEL, REFER TO THE RISER DIAGRAM
30. PROVIDE DEDICATED EMERGENCY POWER CIRCUIT FOR EACH SYSTEM.
31. TEMPERATURE SENSOR AT THE CEILING AND CONNECTED TO THE JCI BAS PANEL WITH THREADED RIGID. PROGRAM TO ALARM AT THE MASTER HVAC SHOP TERMINAL 9TMB BLD 320 WHEN LESS THAN 40F AND ABOVE 95F



2 BUILDING 21 PLAN - ELECT

ISSUED FOR SOLICITATION	5 MAY 2014
Revisions:	Date

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Drawing Title: POWER AND LIGHTING PLAN MEDIUM VOLTAGE EQUIPMENT ROOM

Approved: Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: JC

Project Number: 537-14-110

Building Number: 21

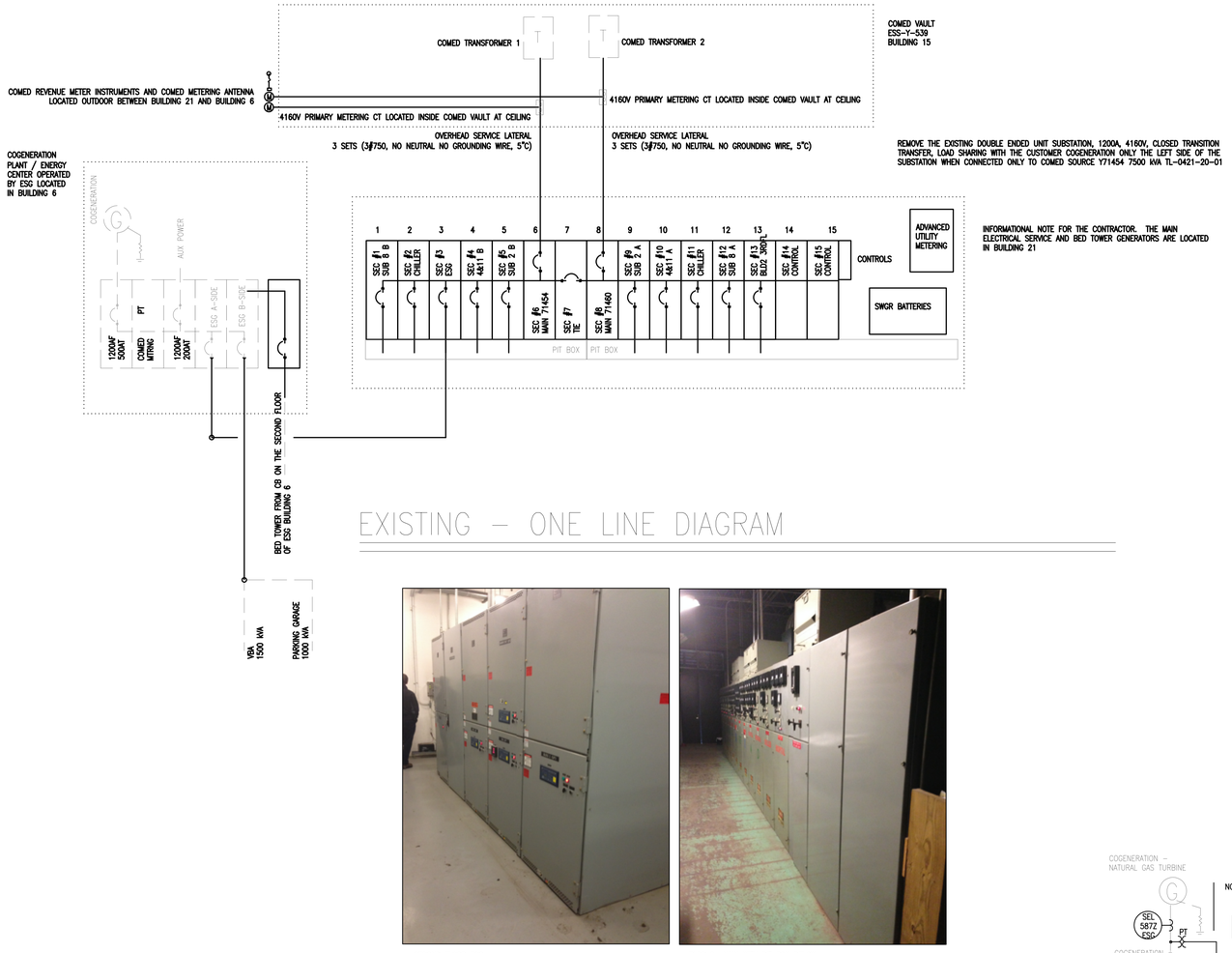
Drawing Number: 537-21-EP-102

Dwg. 12 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231

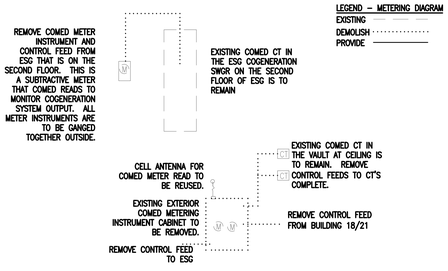


EXISTING – ONE LINE DIAGRAM

SECOND FLOOR ESG

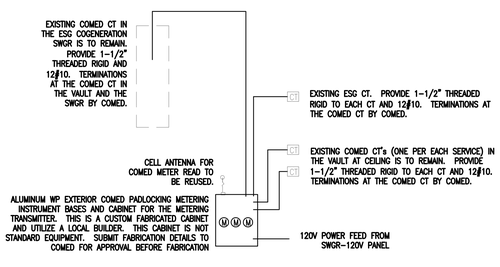
BLDG 21 MAIN WITH BIT BOX BELOW

EXISTING SWITCHGEAR

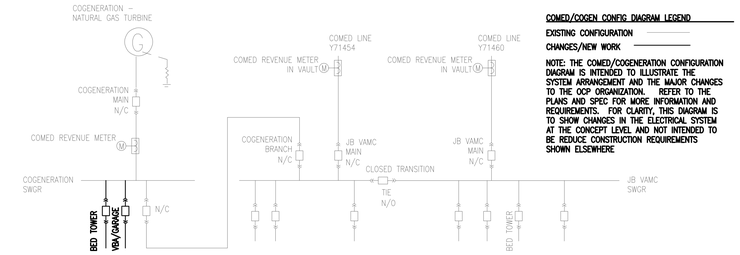


COMED REVENUE METER DIAGRAM – DEMO

COORDINATE WITH VA AND COMED FOR WHAT PHASE OR DATE FOR METERING WORK

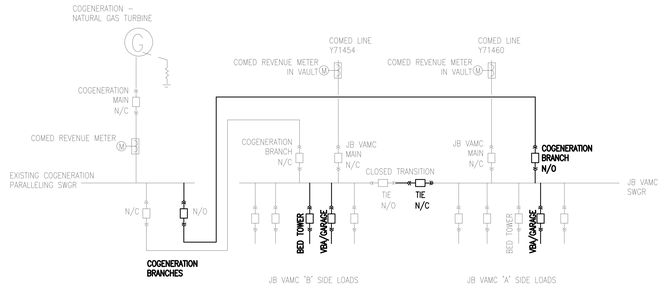


COMED REVENUE METER DIAGRAM – FINAL



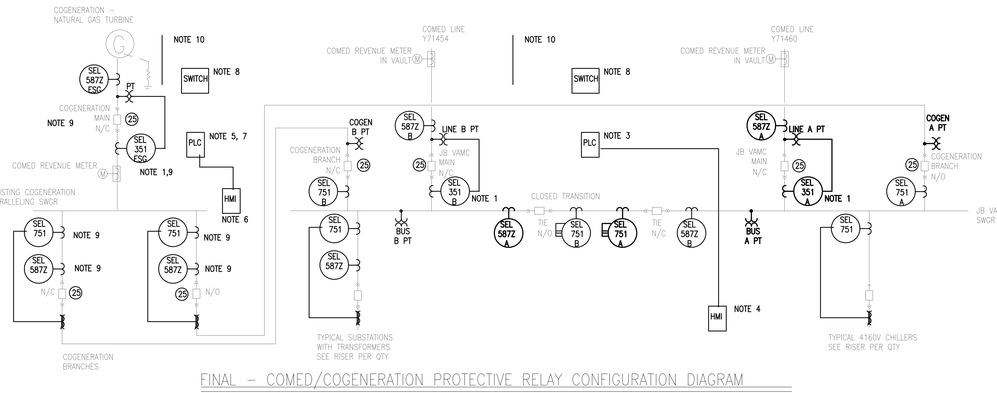
EXISTING – COMED/COGENERATION POWER CONFIGURATION DIAGRAM

EXISTING COMED/COGENERATION CONFIGURATION DIAGRAM GENERAL NOTES
1. COGENERATION SYSTEM CAN ONLY PROVIDE SERVICES ON THE 'B' SIDE
2. ESG 'ISLAND MODE' IS BED TOWER B AND VBA/GARAGE WHEN NOT CONNECTED TO THE UTILITY



FINAL – COMED/COGENERATION POWER CONFIGURATION DIAGRAM

FINAL COMED/COGENERATION CONFIGURATION DIAGRAM GENERAL NOTES
1. COGENERATION SYSTEM
   1.1. PROVIDE COGENERATION POWER TO BOTH 'A' OR 'B' SIDE
   1.2. COGENERATION BRANCH FEEDS ARE CONFIGURED FOR FUTURE INCREASE IN COGENERATION SYSTEM GENERATING CAPACITY
2. DUAL TIE BREAKERS WILL ALLOW SERVICE AND MAINTENANCE WITHOUT GLOBAL SYSTEM SHUTDOWN
3. ALL JB VAMC SWGR MAINS, TIES AND BRANCHES ARE CLOSED TRANSITION TRANSFER
4. LARGER JB VAMC SWGR BUS
   4.1. FUTURE BUILDINGS AND LOADS
   4.2. COLD LOAD PICKUP
7. JB VAMC BRANCHES
   7.1. MORE BRANCHES FOR FUTURE BUILDINGS AND LOADS
   7.2. THE VBA, PARKING GARAGE, AND SECOND BED TOWER FEED REMOVED FROM THE ESG BUS ELIMINATING THE NEED TO RUN ESG IN 'ISLAND MODE'
   7.3. THE 'A' AND THE 'B' SIDE LOADS FOR THE JB VAMC SWGR ARE SAME AS EACH IS CONNECTED TO DOWNSTREAM DOUBLE ENDED SUBSTATIONS WITH TIES.



FINAL – COMED/COGENERATION PROTECTIVE RELAY CONFIGURATION DIAGRAM

FINAL COMED/COGENERATION RELAY CONFIGURATION DIAGRAM GENERAL NOTES: THE CONTRACTOR SHALL INCLUDE THE FOLLOWING FEATURES WITH THE SWITCHGEAR SUBMITTAL MEETING COMED'S REQUIREMENTS FOR COGENERATION:
1. RESIDUAL GROUND FAULT RELAY AND DIRECTIONAL OVERCURRENT ON THE MAINS. SUBMIT RELAY DIAGRAM TO COMED FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
2. RESIDUAL GROUND FAULT RELAY WITH DELAY THAT IS COORDINATED WITH ESG COGENERATION RELAY.
3. PLC WITH DUAL PROCESSORS IN SWGR FOR: CONTROL OF THE MAIN–TIE–TIE–MAIN AND DEMAND SIDE MANAGEMENT BASED ON LOAD SHED OR TRANSFER IF LOSS OF UTILITY LINE OR COGENERATION. PLC POWER FROM DC BATTERIES.
4. INCLUDE REMOTE WALL MOUNT TOUCHSCREEN HMI WITH PASSWORD PROTECTION THAT DISPLAYS ALL OCP LOADS, STATUS, AND ALLOWS FOR REMOTE OPERATION OF ALL /ANY OCP AND MAIN–TIE–TIE–MAIN FUNCTION WITHOUT BEING IN THE SWGR ROOM. HMI POWER FROM SWGR BATTERIES.
5. REPLACE THE EXISTING ESG PLC WITH PLC MATCHING THE SWGR HAVING DUAL PROCESSORS AND LOCATE IN ESG: FOR CONTROL OF THE COGENERATION, SYNC, LINE SELECT. SUBMIT RELAY DIAGRAM TO ESG FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
6. DESKTOP HMI WITH LOCAL UPS AND PASSWORD PROTECT FOR FULL OPERATIONAL ABILITY OF THE COGENERATION SYSTEM AND JB VAMC SWGR. POWER FROM EXISTING ESG SOURCE.
7. INTERCONNECT THE SWGR PLC WITH ESG PLC AND UNDER NORMAL OPERATIONS THE SWGR PLC WILL RECEIVE OPERATIONAL COMMANDS FROM THE ESG PLC.
8. DUAL ETHERNET SWITCHES WITH MODBUS ETHERNET TCP/IP EXPORT OF INFORMATION TO THE ADVANCED UTILITY METERING SYSTEM FOR THE VA NATIONAL ENERGY CENTER.
9. REPLACE EXISTING SEL RELAY IN ESG SWGR WITH RELAY SHOWN.
10. PROVIDE CONNECTION FROM A BUS, B BUS AND EEG PT'S INTO COMED VAULT PER COMED REQUIREMENTS,

ISSUED FOR SOLICITATION	5 MAY 2014
Revisions:	Date

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Drawing Title: EXISTING MEDIUM VOLTAGE RISER DIAGRAM	Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21	Project Number: 537-14-110	Office of Construction and Facilities Management
Approved Project Director	Location: JESSE BROWN V.A.M.C.	Building Number: 21	Department of Veterans Affairs
	Date: 7 JAN 2014 / Checked: MS / Drawn: JC	Drawing Number: 537-21-ER-100	
		Dwg. 13 of 16	

VA FORM 08-6231

COGENERATION PLANT / ENERGY CENTER OPERATED BY ESG LOCATED IN BUILDING 6

COGENERATION = NATURAL GAS TURBINE EXISTING 3.4 MW, 0.85PF, 4160V FUTURE 5.2 MW 0.8PF, 4160V

400KVA DIESEL FOR ESG OPERATIONS

ESG DIST 480V, BLOWERS, ABSORBERS, LTG

1600A MAIN AND ATS

1500 KVA 480Y/277V

PT

1200AF 500AT

COMED MTRNG

1200AF 200AT

ESG A-SIDE

ESG B-SIDE

1200AF 1200AT

1200AF 1200AT

COMED REVENUE METER FOR ESG

PROVIDE A REMOTE CONTROL STATION IN ESG CONTROL RM. THE PURPOSE OF THIS REMOTE STATION IS TO FULLY OPERATE THE OCP USING A WORKSATION WITHOUT BEING INSIDE THE SWITCHGEAR ROOM.

COMED LINE Y71454

COMED LINE Y71460

56473

56474

56475

COMED BUS1

DUMMY BRK

COMED BUS2

DUMMY BRK

COMED SWGR

COMED VAULT ESS-Y-539 BUILDING 15

COMED TRANSFORMER 1, TL-0421-20-01
7500 kVA CARTE O.A
12470D-4160Y/2400V, 3 PHASE, GROUNDED WYE TO VAULT GRD BUS
FAULT CURRENT 17405 AMP

COMED TRANSFORMER 2, TL-0421-20-02
7500 kVA CARTE O.A.
12470D-4160Y/2400V, 3 PHASE, GROUNDED WYE TO VAULT GRD BUS
FAULT CURRENT 17405 AMPS

COMED REVENUE METER INSTRUMENTS AND COMED METERING ANTENNA LOCATED OUTDOOR BETWEEN BUILDING 21 AND BUILDING 6

4160V PRIMARY METERING CT LOCATED INSIDE COMED VAULT

4160V PRIMARY METERING CT LOCATED INSIDE COMED VAULT

OVERHEAD SERVICE LATERAL TO B-SIDE SWGR
4 SETS (3ϕ750, MV-105 CU CABLE IN 5" THREADED RIGID), 2" CONCRETE ENCASED COLOR CODED RED
3 PHASE WIRES, NO NEUTRAL WIRE AND NO GROUNDING WIRE PER SET
TERMINATE CONDUITS WITH GROUNDING TYPE INSULATING BUSHINGS AT BOTH ENDS. PROVIDE GROUNDING BONDING CONNECTION
MEDIUM VOLTAGE SERVICE AND SUCH NO CABLE LIMITERS
SEAL WITH Silicone RTV FOAM

OVERHEAD SERVICE LATERAL TO A-SIDE SWGR
4 SETS (3ϕ750, MV-105 CU CABLE IN 5" THREADED RIGID), 2" CONCRETE ENCASED COLOR CODED RED
3 PHASE WIRES, NO NEUTRAL WIRE AND NO GROUNDING WIRE PER SET
TERMINATE CONDUITS WITH GROUNDING TYPE INSULATING BUSHINGS AT BOTH ENDS. PROVIDE GROUNDING BONDING CONNECTION.
MEDIUM VOLTAGE SERVICE AND SUCH NO CABLE LIMITERS
SEAL WITH Silicone RTV FOAM

LEGEND – ONE LINE DIAGRAM
EXISTING
PROVIDE

3 SETS (3ϕ350 MV105 CU, 5" THREADED RIGID)

3 SETS (3ϕ350 MV105 CU, 5" THREADED RIGID)

THE EXACT LOCATION OF THIS TAP IS TO BE COORDINATED AT TIME OF INSTALLATION. BECAUSE THIS FEED IS OVERHEAD AND NOT IN THE PIT BOX, THE TAP WILL OCCUR NEAR BUILDING 21

TB

INFORMATIONAL NOTE FOR THE CONTRACTOR. THE MAIN ELECTRICAL SERVICE AND BED TOWER GENERATORS ARE LOCATED IN BUILDING 21

- ALL OCP'S ARE TO BE POSITIONED SYMMETRICAL FOR 'A' AND 'B' SIDES
- OCPS THAT ARE NOT USED FOR THIS WORK SHALL BE TOP EXIT FOR EASY FUTURE CONNECTIONS.

PC 1000 kVA B-SIDE VBA 1500 kVA B-SIDE WITH INTERLOCK ALLOWING ONLY EITHER 'A' OR 'B' SIDE BUT NOT BOTH

ESG PROVIDES POWER TO B-SIDE

ESG PROVIDES POWER TO A-SIDE

PC 1000 kVA A-SIDE VBA 1500 kVA A-SIDE WITH INTERLOCK ALLOWING ONLY EITHER 'A' OR 'B' SIDE BUT NOT BOTH

ARC RESISTANT METAL CLAD CONSTRUCTION, DOUBLE ENDED UNIT SUBSTATION, 2000A BUS ALL SECTIONS, 4160V, 3 PHASE 3 WIRE (NO NEUTRAL), GROUNDING BAR, 63KAIC rms sym INTERRUPTING OCP, 101KAIC rms sym MOMENTARY BUS/OCP, AUTOMATIC CLOSED TRANSITION TRANSFER FOR LOAD SHARING COGENERATION TO EITHER / BOTH SUBSTATION SIDES / COMED SOURCES. STATION CLASS SURGE ARRESTORS, FRONT AND REAR ALIGNED, FRONT AND REAR ALIGNED, SOLID BOTTOM, INTERNAL PLC FOR COMMAND AND CONTROL, EXTERNAL DC BATTERIES.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
B7	B6	B5	B4	B3	B2	B1		A1	A2	A3	A4	A5	A6	A7
1200AF 1200AT	1200AF 1200AT	1200AF 500AT	COGEN B PT	1200AF 1200AT	2000AF 2000AT	2000AF 2000AT	CNTRL	A-TIE 2000AF 2000AT	MAIN 2000AF 2000AT	1200AF 1200AT	COGEN A PT	1200AF 500AT	1200AF 1200AT	1200AF 1200AT
1200AF 400AT	1200AF 165AT	1200AF 400AT	1200AF 1200AT	1200AF 1200AT	B-MAIN	B-TIE		BUS A PT	LINE A PT	1200AF 1200AT	1200AF 1200AT	1200AF 400AT	1200AF 165AT	1200AF 400AT
					LINE B PT	BUS B PT								

PIT BOX

CHILLER BUILDING 18 B

BUILDING 26, SUBSTATION 8 B

BUILDING 11 SUBSTATION 4&11 B

BUILDING 1C SUBSTATION 2 B

BED TOWER BLD40 3RDFL B

BED TOWER BLD40 3RDFL A

BUILDING 1C SUBSTATION 2 A

BUILDING 11, SUBSTATION 4&11 A

BUILDING 26, SUBSTATION 8 A

CHILLER BUILDING 18 A

ADVANCED UTILITY METERING

SWGR CONTROL + BATTERIES

PROVIDE A REMOTE CONTROL STATION IN BLD 21 GEN SWGR RM. THE PURPOSE OF THIS REMOTE STATION IS TO FULLY OPERATE THE OCP USING TOUCH SCREEN CONTROLS WITHOUT BEING INSIDE THE SWITCHGEAR ROOM.

3ϕ750 MV105 CU, 4" THREADED RIGID

PAD MTD XFMR VBA 1500 kVA

VBA SERVICE 1600A 480Y/277V

PAD MTD XFMR PARKING GARAGE 1000 kVA

PARKING GARAGE SERVICE 1200A 480Y/277V

3ϕ2 MV105 CU, 2-1/2" THREADED RIGID

3ϕ2 MV105 CU, 2-1/2" THREADED RIGID

4160V SWITCH

750KVA 4160V 208Y/120V

MAIN

DIST

TIE

DIST

MAIN

750KVA 4160V 208Y/120V

4160V SWITCH

SUBSTATION 8

SUBSTATION LOCATED IN BUILDING 26

3 SETS (3ϕ350, MV105 CU, 4" THREADED RIGID)

3 SETS (3ϕ350, MV105 CU, 4" THREADED RIGID)

4160V MAIN

DIST

TIE

DIST

4160V MAIN

SUBSTATION IN BLDG 1C (2A-2B)

SUBSTATION LOCATED IN BUILDING 1C

3 SETS (3ϕ350, MV105 CU, 4" THREADED RIGID)

3 SETS (3ϕ350, MV105 CU, 4" THREADED RIGID)

4160V MAIN

DIST

TIE

DIST

4160V MAIN

HVSN-3-1
1200A, 4160V, 3P, 3W

SUBSTATION LOCATED IN BUILDING 40 BED TOWER MEZZANINE 3RD FL

2 SETS (3ϕ2/0, 1ϕ500, MV105 CU, 4" THREADED RIGID)

2 SETS (3ϕ2/0, 1ϕ500, MV105 CU, 4" THREADED RIGID)

PB

4160V SWITCH

4160V 208/120 V

MAIN

DIST

TIE

DIST

MAIN

4160V 208/120 V

4160V SWITCH

SUBSTATION 11

4160V SWITCH

4160V 480V

MAIN

DIST

TIE

DIST

MAIN

4160V 480V

4160V SWITCH

SUBSTATION 4

SUBSTATIONS LOCATED IN BUILDING 11

3ϕ350 MV105 CU, 3-1/2" THREADED RIGID

3ϕ350 MV105 CU, 3-1/2" THREADED RIGID

N.C. A

N.C. B

MANUFACTURED BY G+W

N.C. CB11

N.O. TIE

N.C. CB2

MANUFACTURED BY SQ-D

CHILLER 2

750KVA

CB 11

CHILLER 1

CHILLER 3

CB 2

750KVA 4160V 480V

120/1A 480V PUMPS + MISC

CHILLERS LOCATED IN BUILDING 18

WESTINGHOUSE CHILLER 1 STRTR 4160V

WESTINGHOUSE CHILLER 2 STRTR 4160V

WESTINGHOUSE CHILLER 3 STRTR 4160V

FINAL – ONE LINE DIAGRAM

ISSUED FOR SOLICITATION	5 MAY 2014
Revisions	Date

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Drawing Title: MEDIUM VOLTAGE RISER DIAGRAM

Approved Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: JC

Project Number: 537-14-110

Building Number: 21

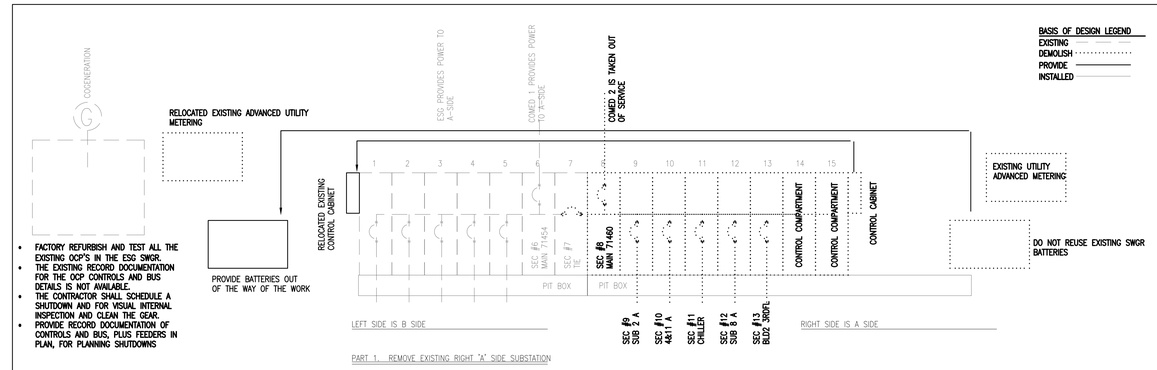
Drawing Number: 537-21-ER-101

Dwg. 14 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



PART 1 - REMOVE EXISTING RIGHT 'A' SIDE SUBSTATION

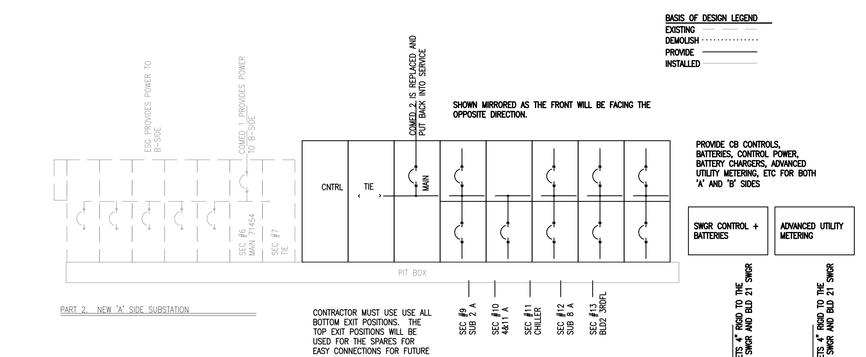
ACTION ITEM LIST FOR PART 1:

1. MISCELLANEOUS VA ITEMS ARE STORED IN BUILDING 21. INVENTORY ALL AREAS OF BUILDING 21. PROVIDE INVENTORY AND RECORD PHOTO DOCUMENTATION TO THE VA. ALLOW THE VA 21 DAYS TO SALVAGE ANY ITEMS STORED. ITEMS NOT REMOVED BY THE VA SHALL BE DISPOSED BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL OPEN THE EXISTING MAIN ELECTRICAL EQUIPMENT (INCLUDING THE PIT BOX BELOW) FOR VISUAL INSPECTION AND SURVEY WITH PHOTO DOCUMENTATION. COMPLY WITH NFPA 70E FOR PPE AND PERMIT FOR WORKING NEAR EXPOSED LIVE PARTS. THIS ACTIVITY IS TO FIELD VERIFY AS BUILT RECORD DOCUMENTATION, CABLE LENGTHS / TYPES FOR PREPARATION OF THE SUBMITTALS. THIS WORK WILL BE OBSERVED BY THE VA AND AE. PROVIDE A REPORT OF FINDINGS SHOWING EXISTING CABLE SIZES AND RESPECTIVE EXISTING OCP RATINGS AND SUBMIT TO THE VA. PROVIDE SUBMITTAL THAT SHOWS PROPOSED ELEVATION OF NEW SUBSTATION AND WHAT EXISTING AND PROPOSED FEEDS WILL BE TOP EXIT/BOTTOM EXIT AND THEIR LOCATION IN THE SUBSTATION LINEUP AND SUBMIT TO THE VA FOR APPROVAL.
3. THE CONTRACTOR SHALL OPERATE THE MAIN SUBSTATION AND ALL RESPECTIVE DOWNSTREAM SUBSTATIONS AND SHIFT THE LOAD ALL TO ONE SIDE OF THE SUBSTATION AND THEN BACK. INCLUDE OBSERVING ALL DOWNSTREAM LOADS / SUBSTATIONS AND COORDINATION WITH ESG COGENERATION FACILITY. THIS ACTIVITY IS TO FIELD VERIFY THE SEQUENCE OF TRANSFER WITH THE DOWNSTREAM LOADS AND WITH THE COGENERATION. THIS WORK WILL BE OBSERVED BY THE VA AND AE. PROVIDE A REPORT OF FINDINGS TO THE VA COTR.
4. THE ON-SITE ELECTRICAL SHUTDOWN WORK FOR THIS PART SHALL NOT BEGIN UNTIL ALL OF THE FOLLOWING ARE COMPLETED:
   - 4.1. THE SUBSTATION EQUIPMENT FABRICATION SUBMITTAL, CONTROL DRAWINGS, DATA SHEETS AND SHORT CIRCUIT CALCULATIONS ARE APPROVED BY THE VA AND AE. LIMIT THE SHORT CIRCUIT CALCULATIONS TO 4160V ONLY ALL EXISTING BRANCHES AND SUBSTATIONS. PROVIDE PROJECT SPECIFIC ARC FLASH WARNING LABELS ON ALL ALL 4160V NEW AND EXISTING EQUIPMENT.
   - 4.2. THE CONTRACTOR HAS COORDINATED WITH COMED AND COMED AGREES TO ALL SHUTDOWNS AND CHANGEOVER DATES. THE PROJECT CPM SCHEDULE IS COORDINATED WITH COMED, ESG, AND JB VAMC STAFF ELECTRICAL AND APPROVED BY THE VA COTR
   - 4.3. THE CONTRACTOR SHALL SUBMIT SUBSTATION FABRICATION AND CONTROL DRAWINGS TO BOTH ESG AND COMED AND THEY ARE REVIEWED AND APPROVED. THE CONTRACTOR MUST ANTICIPATE SHOP DRAWING TIME IN THEIR CPM SCHEDULE. CONTRACTORS MUST INCLUDE 6 – 12 WEEKS FOR THESE OUTSIDE PARTY REVIEWS AND RESUBMITTALS IF REQUIRED FROM REVIEW COMMENTS.
   - 4.4. THE PROJECT SPECIFIC SECURITY PLAN, SAFETY PLAN, LOCK-OUT-TAG-OUT PLAN, AND PPE PLAN IS SUBMITTED TO THE VA AND APPROVED
   - 4.5. THE BASIS OF DESIGN HAS BEEN REVIEWED, MODIFIED, CORRECTED, CHANGED, UPDATED WITH MORE AND COMPLETE FACTORY SPECIFIC DETAILS, AND SUBMITTED BY THE CONTRACTOR BACK TO THE VA AND APPROVED. INCLUDE RESULTS FROM THE PIT BOX SURVEY AND THE OPERATION OF THE SYSTEM AS PREVIOUSLY DESCRIBED. THE SUBMITTAL SHALL HAVE A DETAILED NARRATIVE, DIMENSIONED FLOOR PLAN BASED ON THE EQUIPMENT SUBMITTALS, ELEVATIONS AND CONDUIT ROUTING FOR ALL FEEDERS AND CONTROLS. AS-BUILT OF THE LIGHTING, RECEPTACLES, FIRE ALARM AND SECURITY PLANS, DEVICES, CONDUIT AND WIRE SHALL BE SUBMITTED SEPARATELY AND SHALL CONTAIN ONLY THE AMOUNT OF DETAILS NEEDED TO PLAN THE PROPER SCHEDULING OF THE WORK.
   - 4.6. PROVIDE PIT BOX SUBMITTAL FOR VA REVIEW PRIOR TO STARTING INSTALLATION
   - 4.7. THE EXISTING MV SWGR CONTROLS AND BATTERIES ARE PRESENTLY LOCATED IN CONFLICT WITH THE STAGING OF THE WORK.
     - 4.7.1. THE BATTERIES ARE IN POOR CONDITION AND CANNOT BE RELOCATED AND TRUSTED AS SUITABLE FOR USE, PROVIDE REPLACEMENTS. THE CONTRACTOR SHALL NOT USE THE FINAL BATTERIES FOR TEMPORARY BATTERIES.
     - 4.7.2. THE EXISTING CONTROL RECORD DOCUMENTATION IS INCOMPLETE AND NOT RELIABLE. VISUAL OBSERVATION REVEALS WESTINGHOUSE METERING AND THE USE OF NON-SIS WIRING IN THE EXISTING SWGR. THE CONTRACTOR SHALL CREATE AN AS BUILT LINE DIAGRAM OF THE EXISTING CONTROLS AND INTERLOCKS INCLUDING THE COGENERATION PLANT. UTILIZE A TRAINED SWGR TECH TO SURVEY THE EXISTING CONTROLS AND TO DEVELOP THE RELOCATION STRATEGY SO AS TO NOT LOOSE FUNCTIONALITY. SUBMIT AS BUILT CONTROL DIAGRAM WITH A CONTROL RELOCATION PLAN TO VA FOR APPROVAL. ONCE APPROVED, RELOCATE THE EXISTING CONTROLS FOR THE LEFT SIDE OF THE SUBSTATION. COORDINATE WITH ESG AND TEST TO FIELD VERIFY THE PROPER OPERATION. THIS TESTING WILL BE OBSERVED BY THE VA AND AE.
   - 4.8. DELIVER AND ERECT THE ENTIRE FINAL SUBSTATION AND COMPONENTS IN A SECURE HEATED STORAGE FACILITY. PROVIDE A FULLY FUNCTIONAL MOCKUP OF THE SYSTEM AND CONTROLS FOR OBSERVATION BY THE VA AND AE. USE FACTORY TECHNICIANS TO PERFORM THE WORK. LOCATE WITHIN 50 MILES OF JB VAMC.
     - 4.8.1. PROVIDE A FULLY FUNCTIONAL PERFORMANCE TEST OF THE CONTROL AND RELAY SYSTEM, WITH THE REMOTE STATIONS AND ADVANCED UTILITY METERING FOR OBSERVATION BY THE VA AND AE.
     - 4.8.2. PROVIDE THREE 8 HOUR OPERATION AND TRAINING SESSIONS FOR THE CONTROLS FOR THE AE, CX, VA AND ESG. WHEN THE SYSTEM IS DELIVERED ON SITE, THERE WILL NOT BE SUFFICIENT TIME TO FULLY TRAIN ON THE PROPER OPERATION OF THE SYSTEM.
     - 4.8.3. USE FACTORY TECHNICIANS TO PERFORM THE WORK AND TO DO THIS TRAINING.
   - 4.9. RELOCATE THE EXISTING UTILITY ADVANCED METERING. THE UTILITY HAS IDENTIFIED THAT THE EXISTING UTILITY LINES CANNOT POWER THE EXISTING CAMPUS UNDER PEAK SUMMER LOAD WITH CONCURRENT LOSS OF THE COGENERATION. THE EXISTING ADVANCED METERING IS TO REMAIN IN SERVICE TO ALLOW THE VA AND THE CONTRACTOR TO MONITOR THE LOAD ON THE SYSTEM. THIS METERING INFORMATION IS AVAILABLE TO THE CONTRACTOR THROUGH THE COTR.

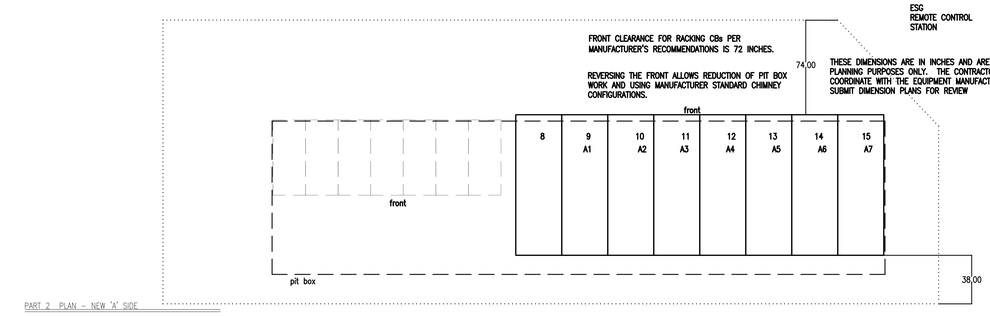
SEQUENCE OF CONSTRUCTION FOR THIS PART:

5. UPON COMPLETION OF ALL PREVIOUSLY LISTED ITEMS AND WRITTEN APPROVAL FROM THE VA AND ESG, BEGIN THE SWITCHGEAR REPLACEMENT WORK.
   - 5.1. HAVING THE JB VAMC CAMPUS ON ONE COMED SERVICE IS CALLED BY COMED AS 'OUT OF CONFIGURATION'. THIS SHUTDOWN STARTS THE OUT OF CONFIGURATION TIMING. THE MAXIMUM TIME ALLOWED BY COMED FOR JB VAMC TO BE OUT OF CONFIGURATION IS 8 WEEKS DUE TO THE LOGISTICS OF OTHER CUSTOMERS ARE ON THE ACTIVE LINE. THAT MEANS THE CONTRACTOR'S WORK MUST BE FULLY COMPLETE EARLY, BECAUSE THE LAST 2 WEEKS OF THIS PERIOD IS RESERVED FOR COMED DISTRIBUTION TESTING AND COMED METERING. THE CONTRACTOR IS TO INCLUDE THE COORDINATING WITH COMED THE DETAILED PLANNING AND SHUTDOWNS. THE VA WILL NOT PROVIDE ANY COORDINATION EFFORT FOR THE CONTRACTOR, INCLUDING COORDINATING WITH ESG.
   - 5.2. STARTING WITH THE FIRST COMED SHUTDOWN, THE CONTRACTOR IS TO WORK, 24 HOURS A DAY 7 DAYS A WEEK TO MINIMIZE THE CONSTRUCTION DURATION.
   - 5.3. THE CONTRACTOR SHALL PROVIDE AN ELECTRICIAN ON SITE TO ACT AS A GUARD AND TO MONITOR THE ELECTRICAL SYSTEM AND INTERFACE WITH COMED AND/OR THE VA IN CASE OF EMERGENCY, UNTIL ALL ELECTRICAL REPLACEMENT WORK IS COMPLETE AND ACCEPTED BY THE VA.
   - 5.4. THE CONTRACTOR SHALL HAVE WEEKLY ON-SITE MEETINGS WITH THE GENERAL CONTRACTOR PROJECT MANAGER, GENERAL CONTRACTOR SUPERINTENDENT, ELECTRICAL CONTRACTOR PROJECT MANAGER, ELECTRICAL CONTRACTOR SAFETY OFFICER, AND THE ELECTRICAL CONTRACTOR MANAGING FORMAN UNTIL THE PROJECT IS ACCEPTED BY THE VA. BEFORE THE SHUTDOWN INCLUDE BI-WEEKLY MEETINGS WITH THE SAME STAFF ON SITE.
6. THE CONTRACTOR MUST SPLIT THE EXISTING SUBSTATION INTO LEFT AND RIGHT SIDES
   - 6.1. THIS DESCRIBES A COMPLETE UTILITY SHUTDOWN WHICH WILL EFFECT EVERY BUILDING ON THE JB VAMC CAMPUS. THE VA UNDERSTANDS THIS WORK REQUIRES A FULL CAMPUS WIDE SHUTDOWN AND REQUIRES THE CONTRACTOR TO ARRANGE THE WORK TO MINIMIZE SHUTDOWN DURATION. THE VA IS ANTICIPATING THAT THIS SHUTDOWN CAN BE DONE SAFELY IN APPROXIMATELY 30 MINUTES.
   - 6.2. COORDINATE WITH ESG AND SEPARATE ESG FROM PROVIDING POWER INTO THE SYSTEM (ISLAND MODE). ESG TO PROVIDE POWER TO VBA,GARAGE AND BED TOWER DURING THIS TASK.
   - 6.3. COORDINATE WITH COMED TO SHUTDOWN BOTH FEEDS SO THE EXISTING SUBSTATION IS FULLY DE-ENERGIZED AND THE EXISTING SWITCHGEAR CAN BE SEPARATED AT THE TIE SECTION.
   - 6.4. SPLIT THE HORIZONTAL BUS AT THE TIE SWITCH AND SEPARATE THE SUBSTATION INTO LEFT SIDE AND RIGHT SIDE.
   - 6.5. RESTORE POWER TO THE ACTIVE SIDE (LEFT SIDE) OF THE EXISTING SUBSTATION AND DO NOT RESTORE POWER TO THE INACTIVE SIDE (RIGHT SIDE) OF THE SUBSTATION.
   - 6.6. COORDINATE WITH THE VA THAT ALL LOADS DOWNSTREAM HAVE BEEN SHIFTED AND POWERED.
7. COORDINATE WITH COMED
   - 7.1. COMED WILL DISCONNECT THE CABLES IN THE COMED VAULT AND THE CONTRACTOR SHALL REMOVE SERVICE LATERAL CABLES AND CONDUIT COMPLETE. PLAN THE RE-ALIGNMNET OF THE SERVICE LATERALS, PATCH EXTERIOR WALLS TO MATCH EXISTING SURFACES. PROVIDE LINTEL IN THE WALL OPENINGS AS REQUIRED.
8. REMOVE THE INACTIVE SIDE OF THE SUBSTATION. PROVIDE A STEEL SIDE PLATE FOR THE EXISTING SWGR AND BOLT IN PLACE.
9. REWORK PIT BOX
   - 9.7. THE PIT BOX COVER IS BOTH TACK WELDED AND RUSTED SHUT.
   - 9.3. CLEAN AND REPAIR ANY DAMAGE TO EXISTING PIT BOX.
   - 9.4. THE PROPOSED SWGR SITS DIRECTLY ONTO THE PIT BOX WITHOUT CONCRETE PAD. PROVIDE CUSTOM SUPPORTS FOR THE SWGR SO THE WEIGHT OF SAME IS NOT ON THE PIT BOX COVER. COORDINATE WITH THE SUBSTATION SUPPLIER AND PROVIDE A STEEL SOLID BOTTOM TO EVERY SECTION OR EXTEND THE PIT BOX COVERS UNDER THE SWGR. MINIMIZE THE SIZE OF OPENINGS BETWEEN THE PIT BOX AND THE SWGR TO ELIMINATE DAMAGE FROM AN ARC FLASH. PROVIDE GROMMET TO PROTECT CABLES PASSING THROUGH THAT OPENING,
   - 9.5. PROVIDE REMOVABLE DIAMOND PLATE GASKETED BOLT DOWN SPLIT TOP COVERS,

PART 1



PART 2 - NEW 'A' SIDE SUBSTATION



PART 2 - PLAN - NEW 'A' SIDE

ACTION ITEM LIST FOR PART 2

1. PERFORM ALL SUPPORT WORK TO MINIMIZE DUST AND VIBRATIONS BEFORE SETTING THE RIGHT SIDE REPLACEMENT SUBSTATION. PROVIDE PROTECTIVE BARRIERS SO THE EXISTING AND NEW EQUIPMENT STAYS CLEAN. EXCESSIVE TEMPERATURES, VIBRATIONS AND DUST MAY CREATE UNRELIABLE OPERATION OR UNEXPECTED OPERATION.
2. PIT BOX IMPROVEMENTS TO BE INSPECTED NY THE VA PRIOR TO SETTING REPLACEMENT SWGR
3. COORDINATE SHIPPING SPLITS. THE EQUIPMENT USED IN THE NEXT PARTS SHALL REMAIN IN THE STORAGE FACILITY PREVIOUSLY DESCRIBED. SWGR SECTIONS TO BE ROLLED INTO PLACE WITH NO HOISTING CONNECTED TO THE STRUCTURE.
4. COORDINATE WITH COMED FOR REPLACEMENT OVERHEAD SERVICE LATERAL.
   - 4.1. PROVIDE CABLE IN COMED VAULT UP TO THE COMED CT PLUS ALLOW UP TO 50 EXTRA FEET PER FEED. HOWEVER, BEFORE INSTALLING COORDINATE FINAL LENGTHS WITH COMED. BEFORE INSTALLATION AND ADJUST AS REQUIRED.
   - 4.2. COMED TO RECEIVE THE CABLE AND PROVIDE TERMINATIONS WITHIN THE COMED VAULT.
5. CONNECT THE BRANCH FEEDERS
   - 5.1. ADJUST POSITIONS TO ELIMINATE OR MINIMIZE SPLICES.
   - 5.2. PROVIDE BUTT SPLICES IN THE PIT BOX FOR SYMMETRY IN FINAL LEFT AND RIGHT SIDE CONFIGURATION AND RECONNECT FEEDS TO SWGR
   - 5.3. COORDINATE FEEDER LENGTHS AND OCP POSITIONS.
   - 5.4. THE VA DESIRES THAT THE FINAL OCP POSITIONS ON THE LEFT AND RIGHT SIDES OF THE TIE BREAKER IS SYMMETRICAL.
   - 5.5. INCLUDE BUTT SPLICES FOR ALL SETS OF CABLES TO EXTEND TO THE OCP
   - 5.6. SUBMIT PLAN AND ELEVATION FOR VA APPROVAL OF LEFT/RIGHT AND TOP/BOTTOM EXIT FOR REVIEW PRIOR TO FINAL TERMINATIONS.
   - 5.7. MEGGER TEST ALL FEEDERS (NEW AND EXISTING) AND PROVIDE REPORT TO THE VA
6. INSTALL BATTERIES, CHARGER, CONTROLS, RELAYS, PLC'S, HMI, AND INTERCONNECT WITH ESG FOR PROPER SYNC.
   - 6.1. PROVIDE HMI REMOTES AND PLC CONNECTION FOR MONITORING THE BATTERIES.
   - 6.2. PROVIDE A FULLY FUNCTIONAL PERFORMANCE TEST OF THE PROTECTIVE RELAY, CONTROL SYSTEM, COGENERATION SYNC CHECK, DEMAND SIDE MANAGEMENT, REMOTE STATIONS FOR OBSERVATION BY THE VA AND AE. NOT LESS THAN 3 SESSIONS ON SEPARATE NONCONSECUTIVE DAYS.
   - 6.3. PROVIDE THREE 8 HOUR OPERATION AND TRAINING SESSIONS FOR THE VA AND FOR ESG.
   - 6.4. USE FACTORY TECHNICIANS TO PERFORM THE WORK AND TO DO THIS TRAINING.
7. INSTALL ADVANCED UTILITY METERING CONTROLS AND TEST UNDER UTILITY POWER
   - 7.1. THE PROTECTIVE RELAY / SWGR PLC IS TO EXPORT INFORMATION NEEDED BY THE VA's ADVANCED UTILITY METERING SYSTEM. IN ADDITION, PROVIDE INFORMATION AND COMMANDS FOR DEMAND SIDE MANAGEMENT. EXAMPLE IS AUTOMATIC LOAD SHED IF LOSS OF ONE SOURCE OF CURRENT SUPPLY BUT NOT THE OTHER (LOSS OF ONE COMED LINE AND CONCURRENT LOSS OF THE COGENERATION FACILITY).
   - 7.2. PROVIDE TWO SEPARATE 4 HOUR OPERATION AND TRAINING SESSIONS FOR THE ADVANCED METERING AND DEMAND MANAGEMENT.
   - 7.3. USE FACTORY TECHNICIANS TO PERFORM THE WORK AND TO DO THIS TRAINING.
8. AS MENTIONED PREVIOUSLY, JB VAMC CAMPUS WHEN POWERED BY ONLY ONE COMED SERVICE IS CALLED BY COMED AS 'OUT OF CONFIGURATION'.
   - 8.1. THE CONTRACTOR CANNOT EXCEED THAT TOTAL 'OUT OF CONFIGURATION' TIME INCLUDING COORDINATING WITH COMED FOR THEIR DISTRIBUTION TESTING AND COMED METERING. REFER TO PART 1 NARRATIVE. THIS INCLUDES COORDINATING WITH COMED FOR THE LAST 2 WEEKS OF THAT PERIOD FOR COMED DISTRIBUTION AND TESTING.
   - 8.2. THIS IS A FEDERAL FACILITY AND THE CITY OF CHICAGO WILL NOT INSPECT BEFORE COMED STARTUP, HOWEVER THE VA'S AE/CX AGENT WILL INSPECT AND ACCEPT ON BEHALF OF THE VA.
   - 8.3. PROVIDE TWO SEPARATE 8 HOUR OPERATION AND TRAINING SESSIONS FOR THE ENTIRE SYSTEM AND CONTROLS FOR COMED.
   - 8.4. USE FACTORY TECHNICIANS TO PERFORM THE WORK AND TO DO THIS TRAINING.

PART 2

ISSUED FOR SOLICITATION	5 MAY 2014
Revisions	Date

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Drawing Title: BASIS OF DESIGN 1 of 2

Approved Project Director

Project Title: REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21

Location: JESSE BROWN V.A.M.C.

Date: 7 JAN 2014 | Checked: MS | Drawn: JC

Project Number: 537-14-110

Building Number: 21

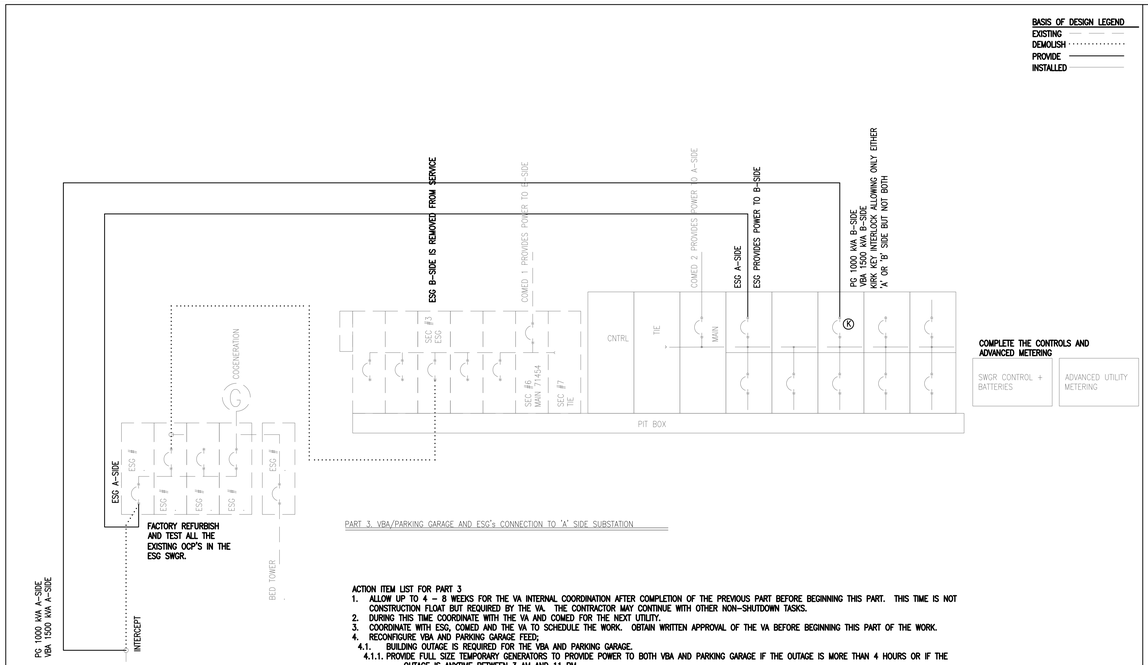
Drawing Number: 537-21-ER-200

Dwg. 15 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

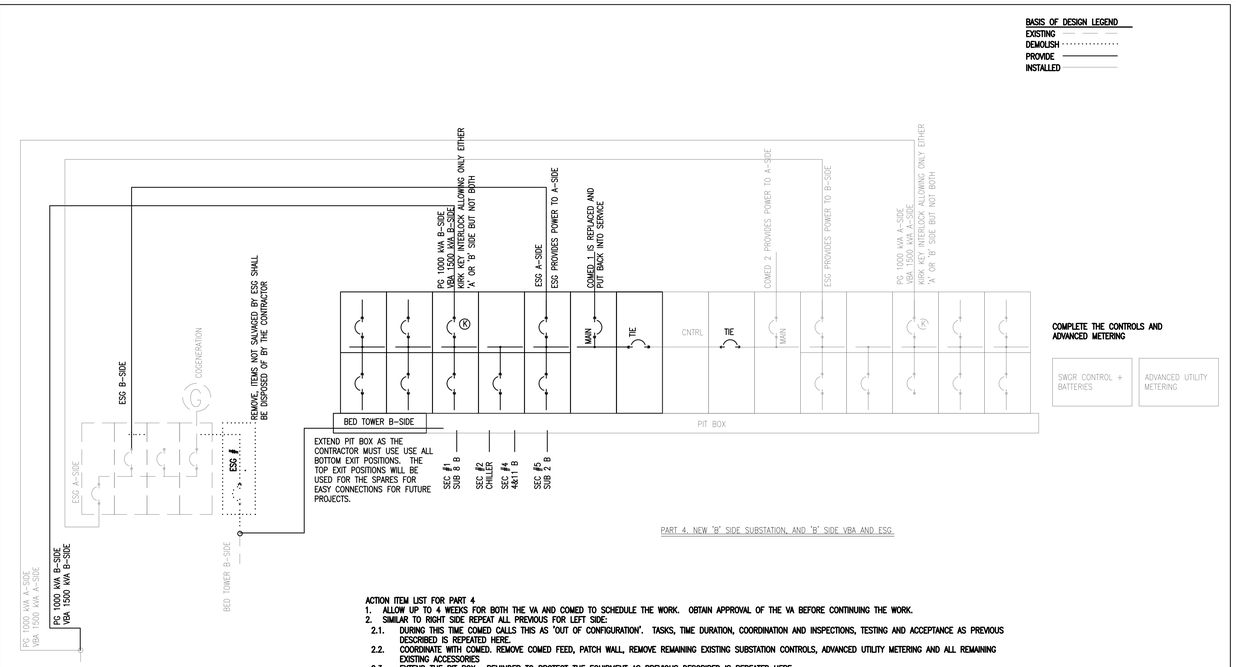
VA FORM 08-6231



PART 3 VBA/PARKING GARAGE AND ESG's CONNECTION TO 'A' SIDE SUBSTATION

ACTION ITEM LIST FOR PART 3

1. ALLOW UP TO 4 – 8 WEEKS FOR THE VA INTERNAL COORDINATION AFTER COMPLETION OF THE PREVIOUS PART BEFORE BEGINNING THIS PART. THIS TIME IS NOT CONSTRUCTION FLOAT BUT REQUIRED BY THE VA. THE CONTRACTOR MAY CONTINUE WITH OTHER NON-SHUTDOWN TASKS.
2. DURING THIS TIME COORDINATE WITH THE VA AND COMED FOR THE NEXT UTILITY.
3. COORDINATE WITH ESG, COMED AND THE VA TO SCHEDULE THE WORK. OBTAIN WRITTEN APPROVAL OF THE VA BEFORE BEGINNING THIS PART OF THE WORK.
4. RECONFIGURE VBA AND PARKING GARAGE FEED;
   - 4.1. BUILDING OUTAGE IS REQUIRED FOR THE VBA AND PARKING GARAGE.
   - 4.1.1. PROVIDE FULL SIZE TEMPORARY GENERATORS TO PROVIDE POWER TO BOTH VBA AND PARKING GARAGE IF THE OUTAGE IS MORE THAN 4 HOURS OR IF THE OUTAGE IS ANYTIME BETWEEN 3 AM AND 11 PM.
   - 4.2. INSTALL AND COMPLETE RIGHT SIDE VBA AND PARKING GARAGE SUBSTATION FEEDS.
   - 4.3. TEST CABLES AND PROVIDE REPORT TO VA
5. RIGHT SIDE COGENERATION FEED
   - 5.1. MODIFY THE EXISTING ESG DISTRIBUTION EQUIPMENT (LUGS, CONTROLS, TRIP SETTING) FOR SECOND PARALLELING FEED, USING THE PREVIOUS CB POSITION IN THE ESG SWGR.
   - 5.2. INSTALL SECOND ESG FEED, TEST CABLES, PROVIDE REPORT TO VA
   - 5.3. TEST AND SYNCHRONIZE THE COGENERATION WITH COMED ON THE RIGHT SIDE OF THE SUBSTATION
6. TEST THE SWGR CONTROLS UNDER BOTH COGENERATION AND UTILITY POWER USING FACTORY TECHNICIANS AND SUBMIT REPORT OF FINDINGS TO THE VA
7. AFTER WRITTEN APPROVAL BY ESG, COMED AND VA, TRANSFER LOAD TO NEW SIDE. OPERATE UNDER COMED AND ESG AS SOURCE OF CURRENT SUPPLY.



PART 4 NEW 'B' SIDE SUBSTATION, AND 'B' SIDE VBA AND ESG

ACTION ITEM LIST FOR PART 4

1. ALLOW UP TO 4 WEEKS FOR BOTH THE VA AND COMED TO SCHEDULE THE WORK. OBTAIN APPROVAL OF THE VA BEFORE CONTINUING THE WORK.
2. SIMILAR TO RIGHT SIDE REPEAT ALL PREVIOUS FOR LEFT SIDE:
   - 2.1. DURING THIS TIME COMED CALLS THIS AS 'OUT OF CONFIGURATION'. TASKS, TIME DURATION, COORDINATION AND INSPECTIONS, TESTING AND ACCEPTANCE AS PREVIOUS DESCRIBED IS REPEATED HERE.
   - 2.2. COORDINATE WITH COMED. REMOVE COMED FEED, PATCH WALL, REMOVE REMAINING EXISTING SUBSTATION CONTROLS, ADVANCED UTILITY METERING AND ALL REMAINING EXISTING ACCESSORIES
   - 2.3. EXTEND THE PIT BOX. REMINDER TO PROTECT THE EQUIPMENT AS PREVIOUS DESCRIBED IS REPEATED HERE.
   - 2.4. REWORK EXISTING PORTION OF THE PIT BOX AND PROVIDE NEW COVERS
   - 2.5. MEGGER TEST BRANCH FEEDERS AND PROVIDE REPORT TO VA
   - 2.6. SET REMAINING SWGR, INSTALL THE CONTROLS AND ADVANCED UTILITY METERING
   - 2.7. COORDINATE WITH COMED AND PROVIDE LEFT SIDE COMED SERVICE
3. REDIRECT THE BED TOWER, VBA/ PARKING GARAGE FEED FROM ESG AND CONNECT DIRECT TO SWGR
4. RECONNECT THE COGENERATION FEED AND ALL OTHER FEEDS TO THE RIGHT SIDE SUBSTATION, MODIFY THE LUGS / CONTROLS / TRIP UNIT, MEGGER TEST AND PROVIDE REPORT TO THE VA.
5. TEST LEFT SIDE COMPONENTS, CONTROLS AND ADVANCED METERING. TASKS, TIME DURATION AND COORDINATION AS PREVIOUS DESCRIBED IS REPEATED HERE.
6. PROVIDE TWO 4 HOUR FINAL ADVANCED UTILITY METERING OWNER TRAINING SESSIONS AND TWO 8 HOUR FINAL CONTROLS OWNER TRAINING SESSIONS. TASKS, AND COORDINATION AS PREVIOUS DESCRIBED IS REPEATED HERE.

PART 3

PART 4

Revisions	Date
ISSUED FOR SOLICITATION	5 MAY 2014

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Drawing Title	BASIS OF DESIGN 2 of 2
Approved Project Director	
Project Title	REPLACE THE EXISTING MEDIUM VOLTAGE SWITCHGEAR - BLD 21
Location	JESSE BROWN V.A.M.C.
Date	7 JAN 2014
Checked	MS
Drawn	JC
Project Number	537-14-110
Building Number	21
Drawing Number	537-21-ER-201
	Dwg. 16 of 16

Office of Construction and Facilities Management
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